PEACE RIVER Land Recording Division

ISSUED BY THE
DEPARTMENT OF LANDS
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Minister of Lands

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PEACE RIVER LAND RECORDING DIVISION.

THE Peace River Land Recording Division, which embraces the great valleys of the Peace and its affluents, the Finlay and Parsnip Rivers, with the many tributary valleys of the vast northern drainage-basin, contains some millions of acres of agricultural lands, some of which have been explored, while others still await the explorer. When the railroads reach into this northern country settlement will doubtless follow rapidly. Now easy means of communication are lacking, travelling is difficult, and the advice given in bulletins previously issued regarding what was known as "New British Columbia" until railroads were built and settlement followed quickly, against rashly going into a region far removed from convenient transportation and markets, holds good.

From all reports—and with the activity of surveyors and explorers in rolling back the map much more information is now available regarding this part of the Province—there are large areas of fertile lands well suited to mixed farming, dairying, and cattle-raising; but most of this land is at present far from markets, hard to reach, and so isolated that, until the coming of the railroads, those who make homes there must be prepared to "rough it" and bear with all the inconveniences and privations incidental to pioneer life. On the other hand, men accustomed to frontier life, and possessed of sufficient means to establish themselves in advance of the railroad, need have no hesitation about going into a country where the result of their pioneering is likely to yield a competency.

Provision has been made for the construction of the Pacific Great Eastern Railway, now being built between the Coast and Fort George, from that point into the Peace River Valley to the eastern boundary of the Province. This railway will connect at Fort George with the Grand Trunk Pacific system reaching across the Dominion from Prince Rupert and connecting with the Canadian Northern Pacific Railway, which parallels it in the upper valley of the South Fork of the Fraser and turns south towards Kamloops and the Coast. In Alberta a railroad is being constructed by the Edmonton, Dunvegan and British Columbia Railway north from Edmonton to Dunvegan. The Canadian Northern Railroad has a line in operation between Edmonton and Athabaska Landing.

For several years explorations have been carried on in northern British Columbia, and gradually more complete information is being obtained of the vast territory embraced within the boundaries of the Peace River Land Recording Division. The portions to which most attention has been paid are those lying near the numerous waterways. Most of the work done, however, was necessarily of such a superficial nature that only a percentage of the great natural resources have been made known. The reports all agree as to the one important fact, that a very considerable portion of the country is not only fitted for habitation, but well adapted to agricultural pursuits of diverse character, some districts offering exceptional advantages to the cattleman, while others are more suited to the needs of the dairyman and to mixed farming. Dr. Dawson estimated that 31,500 square miles of the Peace River Valley would be found available for agriculture and stock-raising, and, according to Prof. John Macoun, at least 10,000 square miles of the rich valley and prairie lands are in British Columbia. There are great areas of arable land in the Finlay and Parsnip Valleys, in the Omineca and the Nation Lake basins. The total extent of the agricultural land cannot be accurately computed, as, although much has been explored, there are large areas which have not yet been reported upon.

The Peace River Land Recording Division extends from the 55th parallel northward, its highest point reaching the 58th parallel, and between the 120th meridian —the eastern boundary of the Province—and the 127th meridian. On the eastern side is a block of 3,500,000 acres held by the Dominion Government. Applications for land in the remainder of the division must be made to the office of the Government Agent at Fort George, the Commissioner for the Peace River Division. In the Peace River Block homesteads are secured from the Dominion Government's land offices. The office for filing on the land north of the Peace River in the block is at Grouard, Alberta, and for the land south of the Peace River in the block at Grande Prairie, Alberta.

That in the years to come this division will support a large population is evident. The Province of Vologda, European Russia, with similar conditions, but not so favourably situated as regards climate and latitude, being between the 58th and 65th meridians, supports about 1,500,000 people. It exports oats, barley, rye, hemp, and flax; its minerals are salt, copper, iron, marble, pitch, and turpentine. Horses and cattle are raised and exported. The Peace River Division can raise everything grown in other parts of British Columbia to advantage, and is also rich in minerals.

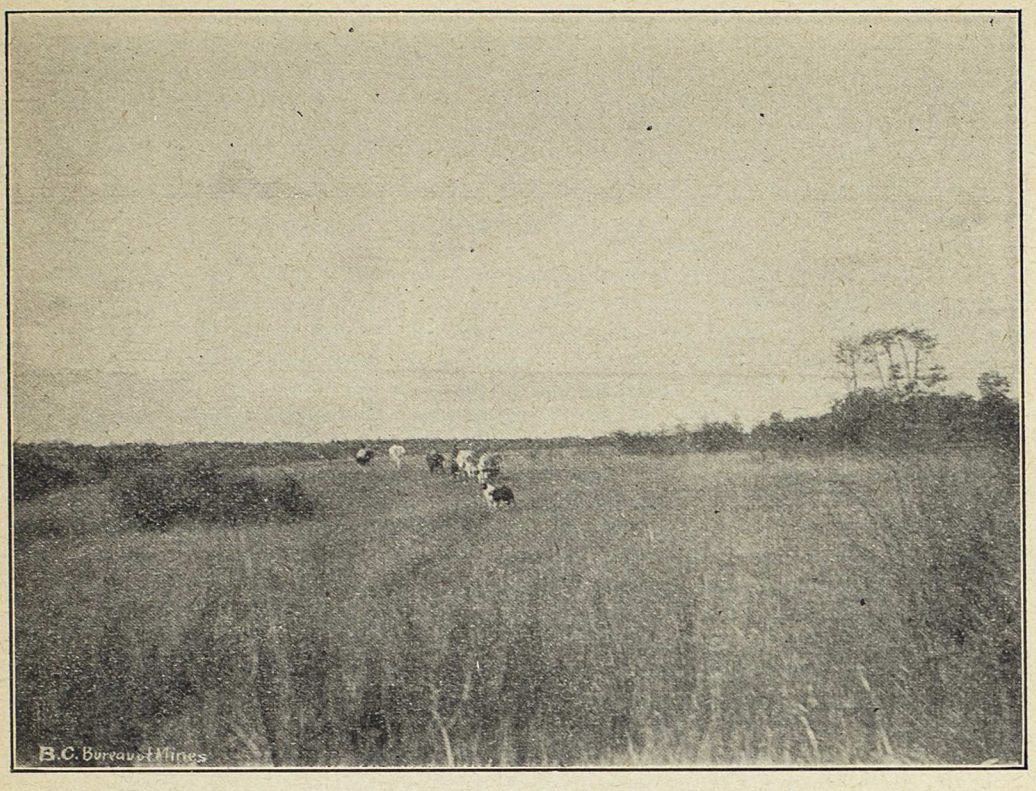
COALFIELDS OF THE PEACE.

With the development of the division coal-seams will be opened up. At Hudson Hope samples of both bituminous and anthracite coal can be seen, some of the anthracite samples having higher heat units than any previously assayed at the Montreal Assay Office.

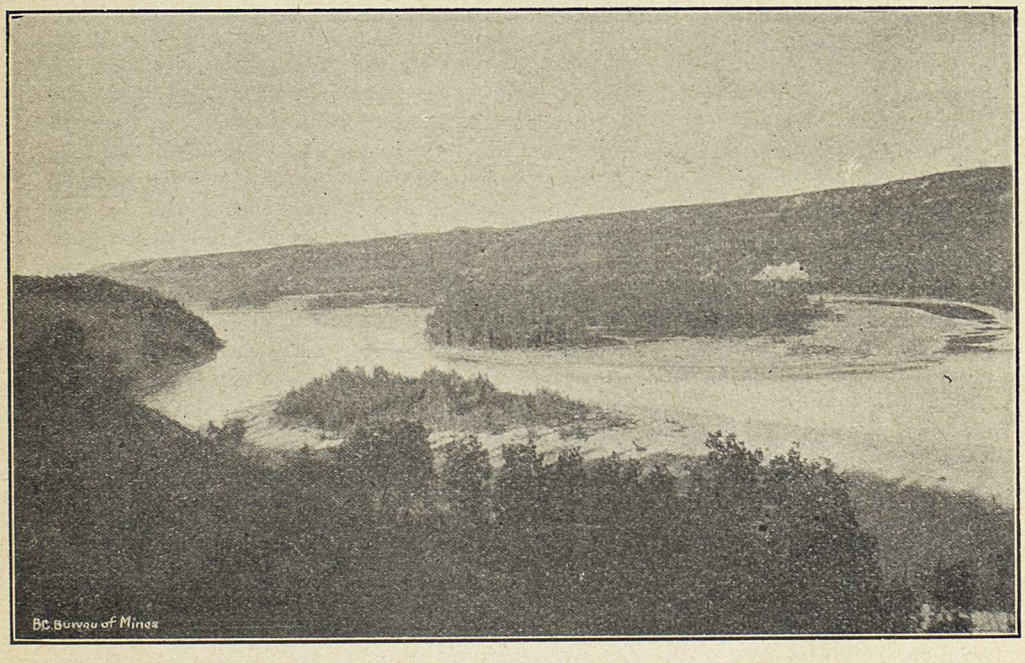
A large portion of the country is covered by the Cretaceous formation, which is the formation in which, both in Alberta and British Columbia, the commercial coal has been found. These formations in the Peace River country have been known for years to contain in parts deposits of coal of exceedingly good quality, which, until the probability of a railroad within a reasonable time was assured, did not offer much inducement to development. With the provision of railroad communication, however, these coal-deposits will be of great importance to the development of the district. C. F. J. Galloway, a mining engineer and coal manager who made a report on the coal region of the Peace River, said: "The high quality of the coal will enable it to compete far afield for railway consumption, to say nothing of the steam navigation on the Peace, Athabaska, and other great rivers of the Mackenzie basin."

From a few miles west of the Carbon River to the east of Hudson Hope the coalfields exist, and good measures are found at and near the Rocky Mountain Canyon, where the dark shales show in the sandstone. On the upper part of the Peace the coal formation extends for about forty miles in an east-and-west direction from just below Parle Pas Rapids to the vicinity of Hudson Hope. The full extent of the field will not be known until further explorations take place. Beyond the mouth of the North Pine River east to Dunvegan the coal-bearing shale is noted. Coal has for many years been known on the South Pine River, and locations have been staked for coal-prospecting licences between the neighbourhood of Pine River Pass and the Dominion Block. Dr. Dawson reported the discovery of coal on this river as far east as the forks in 1875. Coal-measures are also reported on the North Pine River outside of the Dominion Block, so that, if the measures are continuous between these points, the field would seemingly have an extension north and south of at least seventy-five miles without the limit being established in either direction. On Gething Creek, which flows into the Rocky Mountain Canyon, and on Johnson, Moose Bar, and Eight-mile Creeks deposits have been found.

Analysis made of samples of the coal from the Peace River fields show the coal to be of high grade. While not comparable with the best Welsh Admiralty steam-coal, it is equal to a high grade of steam-coal from the Welsh fields and compares favourably with the best West Virginia coals, being altogether of an exceptional high quality for western America. The regularity of the measures and their freedom from disturbance is remarkable, and the low ash-content in most of the samples, taken as they were from outcrops, shows the exceptional clean nature of the seams. As the Rocky Mountain Canyon bars navigation beyond a



Country near Pouce Coupe Prairie, B.C.



Looking East down Peace River from Hudson Hope, B.C.

short distance above Hudson Hope, it would be necessary to construct a rail or tramway to the free water, from where scows could be taken down the river as far as Vermilion Falls, a distance of 600 miles, and the coal could therefore be distributed about the Peace River country very cheaply. The principal market for the coal will undoubtedly be on the Prairies. The rich Peace River District itself will, with the advent of railroad communication, develop very rapidly. Timber is not very plentiful, large portions consisting of prairie land, and there will therefore in the future be a large market for coal in the country.

OTHER MINERALS.

Galena and sulphide ore is found from the Peace south beyond Pine Pass; mica with large clear sheets and fine cleavage in various places, especially near the low-grade ore-body at Mount Selwyn, near the junction of the Finlay and Parsnip; platinum and gold is reported to exist in the tributaries of the South Pine River; and cobalt, copper, cement, and stream tin in the mountains south of the Pine Valley. The tin is uncertain. There is also mineral tar flowing in springs, mineral springs, lime, and other mineral resources. Some fine gold is found in the bars of the Peace River, and attempts have been made to wash the bars with cradles and sluices, but, while some quantity of gold has been recovered, the bars are not rich enough to pay for this class of mining. The results obtained, however, indicate the possibility of their being successfully worked by dredging, the character of the river-bed and its freedom from boulders being particularly suited for such operations. When the difficulties of transporting heavy machinery into the division have been overcome dredging operations are likely to be carried on. On the Pine River Pass are one or two gold-bearing quartz ledges and some coal-seams have been staked there. Seams of lignite are noted in many places in the division and plenty of float is to be seen in the creeks. In several streams colours are noticed, and surveyors have panned fine gold in the Missinchinka. Mr. Macdonell, C.E., who acted on behalf of the Dominion Government in locating the Peace River Block, located some gold-bearing ore on the Peace River seventeen miles below Fort St. John. There the river had exposed a face 50 feet high of wide extent, where crushings yielded $2 in gold to the ton. The beds extend for many miles along the river-banks and may be the source of the gold found in bars on the Peace.

The Omineca District in this division was second only in importance to the Cariboo as a gold-mining section of the Province. Germansen, who gave his name to the lake, creek, and landing on Omineca, discovered the placer-workings there, and for several decades gold has been washed on the rivers and creeks of the district. The old placer-workings were located on Manson, Germansen, Vital, and Tom Creeks. At present placer-mining is being carried on at Manson and Germansen Creeks and some quartz-mining near the Fall River. Mr. Swannell, B.C.L.S., who visited this district in 1913, says: "Some forty white men all told are working in this section, and a well-equipped prospecting party was encountered on the Stranger River. Much ground known to be auriferous will remain unworked until transportation facilities are improved. At present it is difficult to get machinery or supplies in from outside, every pound having to come in by pack-horse or toboggan. In spite of this handicap, several hydraulic plants and two sawmills have been installed, although the latter have not been worked for some years. Easy communication with the Peace River, or a wagon-road joining the one now being built from Tacla Lake to Silver Creek, would increase the mining activity in this region tenfold. Machinery could be brought to either of these points of entry by light-draught steamboats."

THE LAND OF FUR.

For decades the Peace River Division has exported furs. It has been generally associated in the public mind as the land of fur. The principal furs are fox, mink, and weasel. The Hudson's Bay Company and Revillon Freres have important fur-trading stations at Fort St. John and Hudson Hope. In addition to the Indians, between forty and fifty white men live solely by trapping and make good catches.

Foxes, both alive and dead, are shipped mainly to Edmonton. In the district are to be found bear, wolf, beaver, otter, marten, moose, and deer. The Rockies are full of caribou, moose, and bear. The Indians, the Beaver stock, are tepee Indians and meat-eaters. They pack out from the posts at Fort St. John and Hudson Hope, their requirements being mainly tea and tobacco, for they depend upon their skill in hunting for their food. One band of Beaver Indians killed fifty-four moose in 1912.

The fur industry, like other frontier industries, will, of course, play out in time, but at present the country from Fort George north is about the best fur country left to the Anciente and Honourable Companie and their latter-day rivals, Revillon Freres. Wolves are a pest. The last season in which they were plentiful over 200 horses were killed by them in the country contiguous to Fort St. John. Rabbits are generally numerous, but, as in lower British Columbia, they have their seasons, and with the periodic disappearance of the rabbit there is usually a descent from the north by wolves and coyotes. On the prairies north and south of the Peace are immense quantities of prairie-chickens, and grouse are plentiful all over the country. Fish abound. Enormous quantities of pike and pickerel are found in most of the lakes of the Peace River section, their presence probably accounting for the absence of salmon, as there is no impediment to the salmon ascending the rivers from the lower Mackenzie, which is profuse with salmon. The pike, or jache fish, as it is locally known, is a fierce glutton and would prevent salmon-spawn from maturing. These fish, averaging 4 lb. and upwards, smoke and dry as well as salmon, which could not be introduced without exterminating the pike and pickerel. Besides these fish are whitefish in Moberly and Swan Lakes, trout of all kinds, even the scaled Arctic trout, ling, and grayling. Wild ducks are plentiful on some of the ponds of the plateau during the summer, especially to the east of the North Pine River.

CLIMATE.

J. A. Macdonell, C.E., who made an exploratory survey in the Peace River Block, took observations, mostly at Fort St. John, during the years 1905 and 1906, covering the period from May 1st, 1905, to July 15th, 1906. He says:

"In the month of May the thermometer registered as the greatest degree of heat at 1.30 p.m., 78 degrees; during the month of June, 72 degrees; during the month of July, 84 degrees on one day only; during the month of August, 78 degrees on two days only; during the month of September, 70 degrees on one day only; during the month of October 56 degrees on one day only; all of these being registered above zero, and being for the summer of 1905.

"During the month of November it registered 3 below at 7 a.m.; on the 29th it registered 24 below at 5 a.m., and on the 30th 20 below at 7 a.m.

"On December 1st it registered 20 below at 6.30 a.m.; from the 2nd to the 6th it registered from 40 below to 4 above; from the 6th to the 8th it registered from 6 below to 6 above; from the 8th to the 19th it registered an average of about 16 above; on the 19th it registered from 4 to 5 below; on the 20th it registered 8 degrees below; on the 21st it registered 10 degrees below; from the 21st to the 29th it averaged about 20 degrees above; on the 29th it registered 10 degrees below; on the 29th, 30th, and 31st it averaged about 5 degrees below.

"On January 1st, 1906, it registered 3 above; from the 1st to the 11th it averaged about 25 degrees above; on the 11th it registered 17 degrees below; on the 12th, 16 below; from the 12th to the 25th it averaged about 30 degrees below; from the 26th until February 1st it averaged about 30 degrees above zero.

"On February 4th it registered 10 degrees below; on the 5th, 6 degrees above; from the 5th to the 10th it averaged about 15 above; from the 13th it averaged from 10 above and 5 below and 12 below, and 15 and 27 above (seems a little mixed), alternating above and below the zero-point for the balance of the month.

"During the month of March the temperature alternated between 42 above as the highest registered temperature to 18 below as the lowest registered temperature; during the month of April the highest registered temperature was 72 degrees, which occurred upon one day only; during the month of May the highest registered tem-

perature was 72 degrees, which occurred upon one day only; during the month of June the highest registered temperatures were 72 and 75 degrees, which occurred on the plateau at Graveyard Creek, also in the course of our travels; during the month of July the highest registered temperatures were 82 and 92 degrees, which also occurred upon the upper plateau during the course of our travels, in the year 1906.

"The first winter the thickness of the ice upon the river did not exceed 2½ feet, at the utmost 3 feet 6 inches. During the year 1906 the thickness of the ice upon the Peace River was 4 feet generally. In some places it exceeded that thickness.

"During the course of our travels upon the plateau in the months of May and June, 1906, we were visited with frost upon several occasions during the night. The registrations of the thermometer were taken at 6 in the morning, the thermometer apparently not registering quite the lowest temperature, which had apparently been attained during the night. On May 6th it registered 30 degrees; on May 7th it registered 25 degrees; on June 15th it registered 34 degrees, with evidences of frost upon the vegetation."

In going through the details of Mr. Macdonell's observations, it would appear that 92 degrees was the highest temperature recorded, it occurring on July 8th and 15th, 1906; while 48 degrees below zero was the lowest recorded, it occurring on January 22nd, 1906.

F. C. Campbell, formerly Government Agent at Fort St. John, in a report on climatic conditions in the Peace River country in 1909, says: "As I was travelling during the summer, I did not take any thermometer readings; however, I experienced the first frost while camped on Tea Creek, on the night of August 22nd. On the afternoon of August 26th, while on the plateau about thirty-five miles north of Fort St. John, we had sufficient snow to whiten all fallen timber, but what fell on the ground melted almost immediately. One might say it was more of a sleet than a snow-storm. During the night globules of ice formed on the grass and bushes, while our boots were stiff with frost in the morning. The next night, while camped on a small creek, perhaps twenty-five miles farther north, it was also very cold, the creek being skimmed over with ice. Again, while camped at Moose River on the plateau east of Fort St. John, we had a very heavy frost on the night of September 8th. However, the plateau to the north of the Peace is said to be colder than that to the south. On the south side, about ten miles west of Sucker Pond, on the night of September 19th, I experienced very heavy frost, sufficient to freeze the ground quite hard. Again, on the morning of September 26th, I found the still water in Rocky Mountain Creek skimmed over with ice. A little dry snow fell on October 7th on the plateau south-west of Fort St. John, and continued at intervals throughout the day. About 3 or 4 inches of snow fell at St. John from October 19th to 21st, but was taken off by a Chinook wind on the 23rd. I found the wind very prevalent on the plateau, and after the first week in September somewhat chilly.

"I am informed that snow usually lies on the ground from about November 1st to about April 15th, and attains a depth of probably 18 inches at Fort St. John. Of course, it would be considerably deeper on the plateau; but on the hillsides, which are wind-swept, but little snow remains in place.

"From the Hudson's Bay Company's journal, I find that the ice started to run in the Peace River at Fort St. John on October 28th, 1908, and that the river closed on December 4th following; that it started to break up again on May 8th, and that the river was clear of ice on May 14th, 1909. This may probably be taken as an average. The current in the Peace runs at a speed of about four or five miles an hour, consequently the ice drifts for a considerable time before finally jamming and closing the river."

G. B. Milligan, B.C.L.S., who made surveys adjoining the Peace River Block in 1912, said: "Observations regarding the weather during last winter were taken by my assistant, who spent the winter at Fort St. John. The only cold weather experienced occurred during the first part of January, the thermometer registering 50 degrees below zero on the 11th. February, March, and April were marked by alternating snowfalls and Chinook winds; the weather was variable. Snow would

occasionally fall to a depth of 12 inches. The side-hills were, however, kept more or less bare owing to the warm winds.

"The ice on the Peace River was unsafe for travel after April 3rd, and by May 3rd the river was entirely clear of ice.

"New grass first appeared about April 15th, especially so where the country had been burnt over early in the spring. Foliage on the willows and poplars was first noticed on the 16th, and by the 20th was in full bloom. Dry weather prevailed through June, while considerable rain fell during July. August and September, however, were fine months, being exceptionally clear. At the end of May and during the first few days of June slight frosts occurred, and also on June 15th. There was also one frosty night about the middle of August. The first snow fell on October 8th, but remained only ten days, after which the weather was again clear and fine."

A. W. Harvey, B.C.L.S., who surveyed lands in the Parsnip and Finlay Valleys in 1912, said: "The snowfall in the Parsnip and Finlay varies from 2 to 6 feet. On the Peace River, east of these valleys, there is a heavy snowfall in the Rocky Mountains, which rapidly decreases toward the east. At the Peace River Canyon horses can frequently be wintered in the open without feeding hay. The climate is similar to that of the Nechako and Upper Fraser Valleys. During the months of June, July, and August, the lowest temperature experienced was 31 degrees and the highest 79 degrees. The rainfall is light, being probably in the neighbourhood of 40 inches. Heavy thunderstorms are of frequent occurrences."

Of the climate in the Parsnip Valley and around McLeod Lake Post, Messrs. Hermon and Burwell, B.C.L.S.'s, who worked in the Parsnip Valley in 1912, said: "According to the Hudson's Bay Company's records, the seasons are rather severe around McLeod and the Parsnip Valley, McLeod Lake freezing up about November 1st, and the ice staying until the beginning of May, the average snowfall during that time being about 5 feet. The summer frosts occur frequently. This summer the leaves began to change and the top of the Hudson's Bay potatoes being frozen off about the middle of August. The summer weather while we were there was ideal, the nights being cool, the days clear and bright. The hottest days were in the first week in July, when the thermometer registered up to 82 degrees in the shade for three days. The coldest night was on August 22nd at the Finlay Rapids, when we had 10 degrees of frost in the valley, with fresh snow on the mountain-tops, lasting for two or three days.

"The average temperature from June 20th to July 1st was 35 degrees at night and 70 degrees in the daytime, including four nights when we had frost, the coldest being 5 degrees on the night of June 25th. In July the average nightly temperature was 40 degrees, the daily temperature being 73 degrees, there being three nights when there was frost between the 1st and 8th, 4 degrees on the 1st, July being the coldest. In August 40 degrees was the average nightly temperature, four nights of frost after the 12th, the coldest being 10 degrees on the 23rd. The average in September was 35 degrees, with frost during twelve nights, the coldest night being on the 11th, with 10 degrees of frost; 63 degrees the average in the daytime. The rainfall seems light. We had one day's rain in June, three in July, four in August, and three in September."

F. C. Swannell, B.C.L.S., whose explorations in 1913 covered the Omineca District from the Nation Lakes and western boundary of the division to the Parsnip and Finlay Valleys north to Fort Grahame, said the climate does not vary much over this area. The winter is reported severe, but generally bright and bracing. An average of the highest temperatures in June, July, and August of 1913 was 56 degrees, the highest temperature being 92 degrees. Rainfall is about 35 inches a year.

WATERWAYS DRAIN TO THE PEACE.

Practically all the waterways of the Peace River Land Recording Division are tributary to the Peace River. The main affluents are the Finlay and Parsnip Rivers. The former flows south-easterly from the north-west of the division, and is joined

by the Ingenika, Omineca, Manson, and Ospika Rivers, the two former being fed by many tributaries. The Parsnip flows north-westerly, and has the Nation River, draining from the chain of lakes known as the Nation Lakes, as its main tributary.

Pending completion of the railroads, access to the Peace River Division may be had via Fort George, Giscome Portage, and the Crooked, Pack, and Parsnip Rivers, which are navigable for canoes; by the old route from Hazelton by way of Babine and Stuart Lakes and the Fort St. James-Fort McLeod Trail and the river-ways; or from Edmonton or Edson, Athabaska Landing, Lesser Slave Lake, and Peace River Crossing.

ROUTE VIA GISCOME LANDING.

N. F. Murray, who made a report on the Peace River country with special relation to road locations in 1913, said: "In the matter of road connection with the road system of the west, it is certain that from the early spring of 1914 an immense amount of freight will go into the Finlay and Peace countries. The movement has already started, and I believe that there is a congestion of goods now at Giscome from various causes. The people of the Peace River country have learned the possibilities of the western routes, and have declared their intention to bring in their provisions, farm machinery, and stock from the west. Almost all portable goods from the west will, for some time, go by the water route.

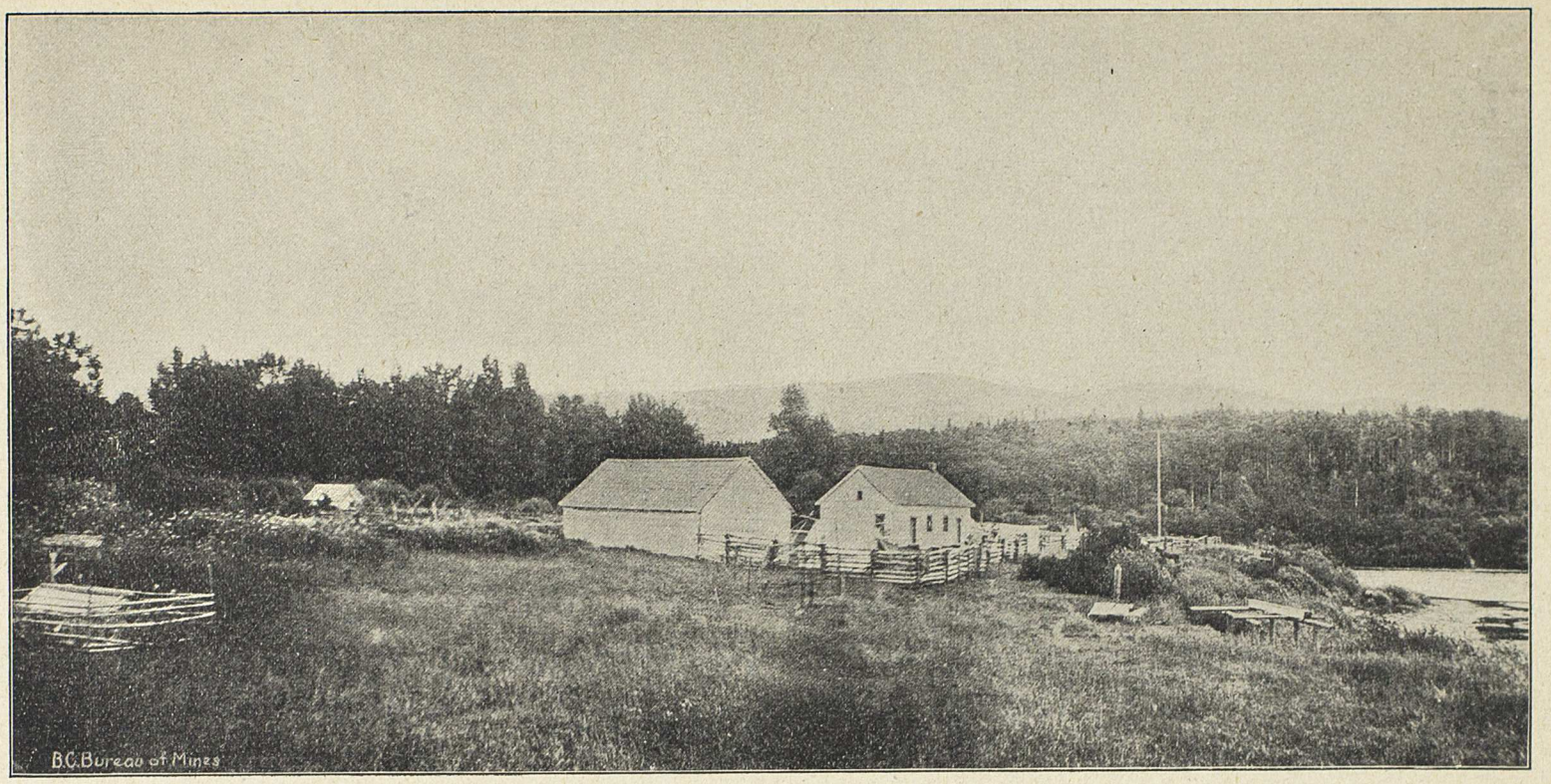
"On this route goods are landed at Giscome, forty-two miles up the Fraser River from Fort George; portaged over a wagon-road for eight miles to Summit Lake, and run down by boats, canoes, and scows through various lakes and the Crooked, Pack, and Parsnip Rivers to Finlay Junction; then down the Peace to the Rocky Mountain Portage of thirteen miles, when the Peace is again navigable without a break to the Chutes at Vermilion. The distances are:—

	Miles.
Giscome Portage	8
Summit Lake	4
Summit Lake to McLeod	65
McLeod to Finlay Junction	115
Finlay Junction to Rocky Mountain Portage	74
Rocky Mountain Portage	13
Total	279

"The only bad waters between the Rocky Mountain Portage, where Rocky Mountain Canyon cuts through between high cliffs and Summit Lake, are the Ne Parle Pas Rapids and Finlay Rapids and the Crooked River. Both these rapids can be safely run by scows or large boats, and, as they are short, can be easily portaged, the shores being good. The Crooked River is a very small, very crooked, narrow, shallow, and swift waterway, with what is known as 'The Wagon-road' meandering down its bed. This is a narrow course down the channel where the rocks have been dragged to one side by the traders and Indians for generations back. This stream, while not dangerous to life, takes its toll in boats and goods every year."

POSSIBILITIES OF WATER ROUTE.

C. F. J. Galloway, who went in 1912 to make a report on the coalfields of the Peace River, travelling via Giscome Portage and the Crooked, Pack, and Parsnip Rivers, said: "The writer was greatly impressed with the transportation possibilities of this route, which, with the expenditure of a comparatively small sum of money, would make a magnificent waterway from Summit Lake to McLeod, a distance in a straight line of about fifty-five miles, but by water of over 100. By dredging certain portions, aggregating perhaps ten miles in all, and widening a few places, a lake and canal route would be formed, over which large scows could be hauled with stern-wheel steamers with equal ease in either direction. By cutting canals across the narrow necks of land in some of the loops the distance could be



Fort McLeod, Hudson's Bay Co. Post, McLeod Lake.

greatly reduced. There appears, moreover, to be no great difficulty in the way of making the Pack, Parsnip, and Upper Peace Rivers navigable throughout, thus establishing a continuous waterway for the whole of the present canoe route from Summit Lake to the Peace River Canyon, a distance of some 300 miles, the greater part of which traverses what will undoubtedly before many years become a very rich farming country."

ROUTES FROM EDMONTON.

There are two routes from Edmonton. The first passes through Athabaska Landing, and thence to Grouard by Athabaska and Lesser Slave Rivers and Lesser Slave Lake. The distance from Edmonton to Peace River Crossing by this route is 380 miles, 565 miles to Fort St. John. The second is by Edson over the Grand Trunk Pacific Railway, and thence by a wagon-road via Sturgeon Lake Settlement to Saskatoon Lake, in Grande Prairie. Both are longer than that via Giscome Landing. Between Edmonton and Athabaska Landing, 100 miles, the Canadian Northern Railway has built a railroad, and the grade was completed and steel being laid in 1913 from Edmonton to a point on Athabaska River near the mouth of Lesser Slave River by the company building from Edmonton to Dunvegan.

From Athabaska Landing a road follows the north shore for seventy-five miles to Mirror Landing, at the confluence of Lesser Slave River with the Athabaska River, and from there for forty miles to the east end of Lesser Slave Lake. The south shore is then followed along the lake for thirty miles to the "Narrows," where, in winter, the lake is crossed diagonally, a distance of nine miles, to the north shore, which is followed for thirty-six miles to Grouard. In summer the wagon-road along the south shore of the lake is followed all the way. Another road follows the south shore of Athabaska River to Mirror Landing. From Sawridge the north shore of Lesser Slave Lake may be travelled to Grouard by following along the beach, which for the first fourteen miles is rough and covered with boulders.

STEAMBOAT SERVICES.

Between Athabaska Landing and Grouard a semi-weekly boat service, frequently very irregular, has been established by the Northern Transportation Company. A small steamer plies between Athabaska Landing and Mirror Landing, and a portage of sixteen miles extends to Norris Landing, from where another steamer plies to Sawridge, at the east end of Lesser Slave Lake. During very high water the small boats can be taken all the way up Lesser Slave Lake, but in low water navigating the rapids between Mirror Landing and Norris Landing is dangerous even with boats of light draught. From Grouard a wagon-road extends eighty miles to Peace River Crossing, and one, sixty-five miles from there to Dunvegan, from where the distance to Fort St. John by road is 160 miles and by river 120 miles.

The Hudson's Bay Company have steamers on the Peace River running from Fort Vermilion to Hudson Hope, which is at the head of navigation, the Peace above that post running in a canyon for several miles. Another trading company, known as the Diamond P Company, own steamers on the Peace River, but the service of both companies is somewhat irregular.

F. C. Campbell, in the report made by him in 1909, in speaking of the river transportation facilities, said: "The Hudson's Bay Company's steamer on the Peace River only runs on an approximate schedule, as the bulk of the business originates with the owners—the Hudson's Bay Company—their chief object being to make three round trips in the season from Vermilion to Fort St. John, on one of which they are to go to Hudson Hope (which is fifty-five miles above Fort St. John). This year they were scheduled to leave Peace River Crossing on the up-river trip about June 1st, July 9, and August 1st; while they did actually leave on June 11th, July 7th, and probably August 3rd or 4th. Considering that the distance from Vermilion to Fort St. John is about 500 miles, and that the difference in altitude is about 500 feet, they ran creditably near their schedule.

"The ice is seldom out of Lesser Slave Lake before the end of May. After waiting on board the steamer for ten days I went through, on the first trip of

the season, on June 7th this year. It will be seen from the above that it is rarely, if ever, that passengers waiting for the first steamer on Lesser Slave Lake can connect with the June trip of the Peace River steamer. One is never able to get freight before the July boat on the Peace, unless it is sent to Peace River Crossing on sleighs during the previous winter. When the roads are breaking up in the spring, they are impassable for freight and almost so for passengers.

"Passengers or freight for the Pouce Coupe would leave the Peace River at Dunvegan (sixty miles above Peace River Crossing) and travel by wagon-road through Grande Prairie to the Pouce Coupe, a distance of about 150 miles.

"During the winter the entire distance from Edmonton has to be travelled by sleigh. The sleigh-road leaves the Peace River at Dunvegan, going south to Spirit River and Grande Prairie; therefore it is a difficult matter to get to Fort St. John after the ice starts to run in the river. The few trips that are made are done with dog-teams; although the Royal North-West Mounted Police, when building the Yukon Trail, brought sleighs up overland during the winter."

SURVEYS IN ADVANCE OF SETTLEMENT.

For many decades the Peace River country has been the land of romance—the land of fur, the Indian, and the Hudson's Bay Company. Through various channels news of the fertile valleys and plateau lands came down to the crowded places, and, distant though they are until the railroads reach them, interest has grown in these lands. There is an eagerness on the part of many to reach into these distant places in advance of the railroads, to pioneer in what will doubtless be, before a great space of time has elapsed, a well-settled country.

Surveys are being made in advance of settlement, explorations in advance of surveys, and information is being made available regarding a large part of this northern land division. This condition—of making surveys in advance of actual settlement—has its advantages, as settlers may arrive on the ground with the fullest information and take up their lands without fear of being disturbed by possible future surveys. Until the present time the development of these great valleys of the Northern Interior has been materially delayed because of their distance from the main route of travel, and transportation has therefore generally been prohibitive in cost, though never lacking altogether. But with the frontier of settlement each year farther afield, and with the completion of the Grand Trunk Pacific Railway at hand, to connect with the great waterway system into the very heart of these new territories, a rapid development can be expected to follow in the near future.

GISCOME PORTAGE.

Giscome Portage, the southernmost point of the Peace River Land Division, is on the divide between the Pacific and Arctic drainages, and at present is the general route by which entry is made from British Columbia. Giscome Portage is in latitude 54° 15′ and runs about eight miles in a westerly direction to Summit Lake. The road ascends 240 feet to the height of the divide and drops to the lake 40 feet by good grades, being generally level on top. Messrs. Seaback and Hubble have a small ranch and trading-store here where supplies may be obtained. The soil is fairly good, producing good vegetables and a small crop of oats, but the seasons are short and they are bothered somewhat by summer frosts. The country on the portage nearing Summit Lake is covered with small jack-pine and some small spruce. The soil is light and sandy. It is generally level, but cut by gravelly ridges.

SUMMIT LAKE AND CROOKED RIVER.

Summit Lake lies at an elevation of 2,400 feet in latitude 54° 20′ and is about three miles and a half wide and almost four miles long. The Crooked River flows out of it. The country surrounding the lake is undulating and covered with scrub spruce, this being the general character of the land in the depression reaching to McLeod Lake. The Crooked River, rightly named, winds from Summit Lake to

McLeod Lake, with a chain of three lakes of two and a half to three miles in length. The upper twenty-five miles of the river is very crooked and shallow; the banks are low and cut by numerous arms and sloughs. There are numerous hay meadows at the turns. For the greater part of this distance the river is from 100 to 300 feet wide, the water being quite dead, suggesting the broads of Norfolk, and forming an ideal natural canal. On the lower part of the river the banks are low, composed of silts thickly covered with alders and willows. The general course of the river is about north. In a few places the stream narrows down and is rapid, but very small, being occasionally reduced to a width of 5 or 6 feet. In these parts it runs over gravel and boulders. Shallow sandbars exist in places over which the water flows swiftly, and between the bars are holes and slack water from 6 to 15 feet deep. On the upper river travellers often find it necessary in summer to get into the water at the bars and haul their canoes across. The last two weeks in May are considered the best times for travelling on this river.

The best way to reach good boating on the Crooked River—that is, at Davie Lake—is to utilize the dry gravel jack-pine bench extending from there south-easterly to the Fraser, instead of the route via Giscome Portage. By way of Charley Paul Creek, about twelve miles up the Fraser from Giscome, was a route used in the first gold-rush. There is good timber for boat-building at Davie Lake. From there to McLeod Lake Post is deep slack water, almost a continual succession of lakes and sloughs, ideal for motor-boats; in fact, with the exception of a short stretch—about 100 feet—of swift water some few miles above the Nation River and the Finlay and Parle Pas Rapids, the whole route to Rocky Mountain Portage, where the canyon stops navigation, is good for steamboats for several months of the spring and summer.

COUNTRY NEAR CROOKED RIVER.

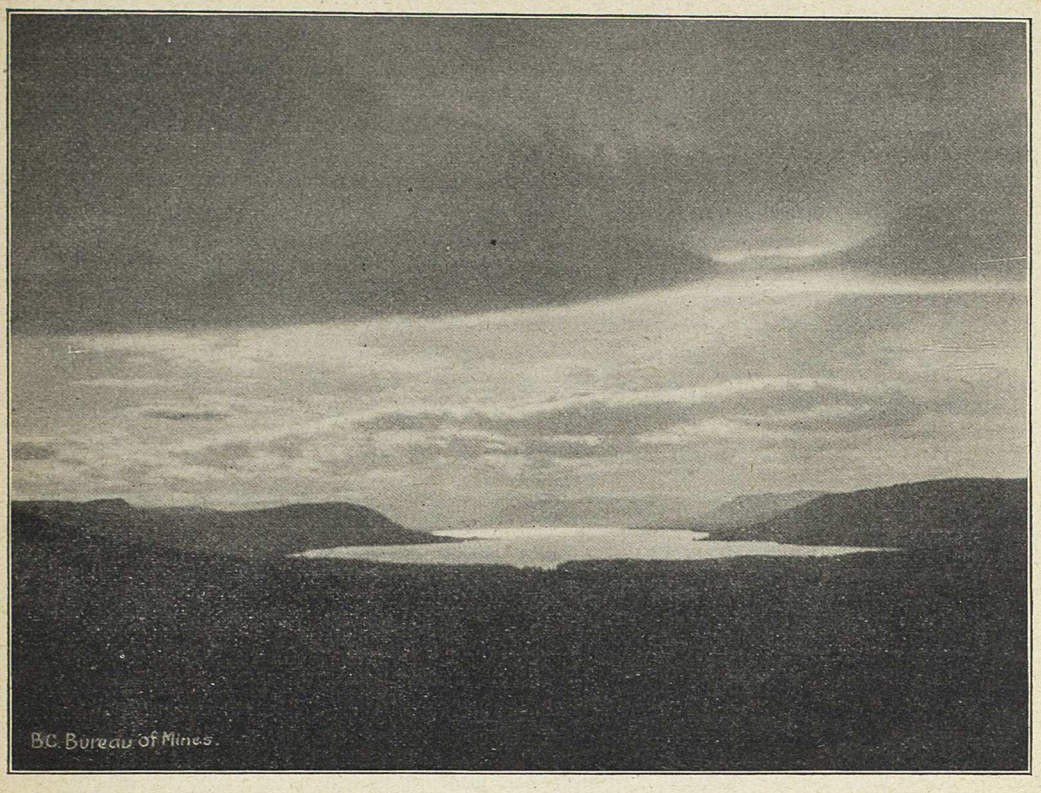
The land generally near the Crooked River is undulating and covered with scrub pine averaging about 8 inches, some balsam and cottonwood, and some small jack-pine and alder. Along the river-bank, extending back for from 5 to 10 chains, are strips of spruce, poplar, jack-pine, and willow flats, where the soil, except in the jack-pine, is suitable for agricultural purposes. Back of this the country is undulating, hilly, and timbered with spruce and jack-pine. The soil is sandy and gravelly.

About twenty-two miles from Summit Lake the river makes a big bend, and about three miles east of this bend is Dominion Lake, and another smaller lake about a mile north. The Little Salmon River joins the Crooked River from the east, flowing around Tea Pot Mountain. The country and soil are similar in this vicinity.

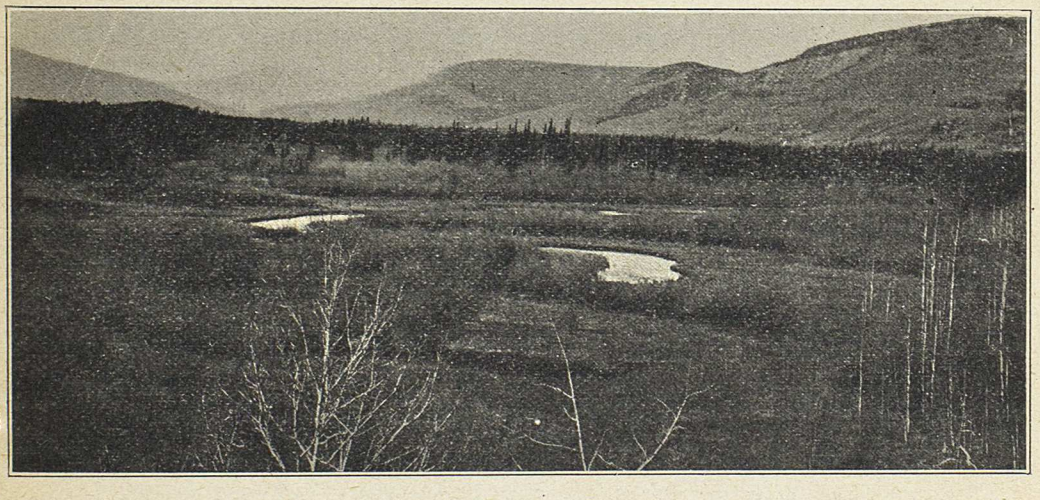
For about six miles below here the river runs very swift over shallow rapids, through a rocky spruce, poplar, and jack-pine country, when it widens through a willow-flat and flows for about nine miles, practically dead-water about 10 to 15 feet deep, into Davie Lake. This lake, about five miles long by two in width, is about thirty-five miles from Summit Lake, along the course of the river. Observations here show: Latitude, 50° 31′ 41″; elevation, 2,425 feet.

A low range of hills forming the watershed between the Little Salmon and Crooked Rivers slopes up from here for five or six miles to the summit, 700 feet above the lake, timbered with some fairly good spruce and fir from 10 to 15 inches, some birch and jack-pine, with sandy soil.

An unnamed creek empties into the Crooked River about a mile below the outlet of Davie Lake, a stream about 20 feet wide. The land it drains does not differ from the surrounding country. Six miles down-stream from this creek the river widens into a shallow slough called Long Lake, and from there an Indian trail runs seven miles and a half north-easterly to Tuchie Lakes, on the divide between the Crooked and Parsnip Rivers, at an elevation of 2,800 feet above sea-level. The country here is much about the same; in fact, it is characteristically the same from Summit Lake to Fort McLeod. The two Tuchie Lakes are clear-water expanses surrounded by well-timbered hills. The westerly lake drains down into the valley of the Crooked River at high water; the other down a shallow river about five miles in length



Moberly Lake, B.C., from the East.



Looking up Moberly Pass, Peace River District.

emptying into the Parsnip River about 100 miles from its headwaters. The timber is smaller here, but country and soil the same. The Parsnip is about 200 feet wide where it is joined by this stream, and is about six miles west of the Rockies.

DAVIE LAKE TO LONG LAKE.

From Davie Lake to Long Lake the Crooked River is practically dead-water 10 to 15 feet deep, with the exception of a few rapids, running through willow-bottom land, which extends about 20 or 30 chains back to the foot of spruce ridges. The surrounding country, twelve or fifteen miles back to the watershed, is hilly, timbered with spruce and some scattered birch and poplar. The soil is sandy and gravelly. From here to Kerrys Lake, about two miles, spruce ridges follow along close to the river, and at the end of Kerrys Lake, about five miles long by two miles wide. A spruce-flat broken by strips of willow and jack-pine extends for about ten miles down-stream, and the river varies from 5 to 8 chains wide, almost dead-water. Below here the spruce-flat widens, extending to the foot of the hills, and there is some fairly good land for agricultural purposes. About three miles from its outlet into McLeod Lake the hills close in. The river narrows to about 50 feet about six miles from the lake and runs swiftly. The land is poor except through the willow bottom. There is a long point reaching into the lake at the mouth of the river.

McLEOD LAKE AND FORT McLEOD.

McLeod Lake, altitude 2,250 feet, is about seventeen miles long by a mile in width. The country surrounding the south end is low and marshy for a couple of miles back, when the hills rise and are considerably higher than those encountered near the Crooked River, the highest being about 500 feet above the lake. The rock formation changes here from diorite to limestone, this formation continuing to the Peace River. On the east side of the lake there is no extent of meadow or open land, except about 40 acres opposite the north end.

Fort McLeod is at the north end of the lake, sixty-five miles from Summit Lake. It is the oldest Hudson's Bay Post in British Columbia, having been established by the North-west Trading Company in 1805 and taken over by the Hudson's Bay Company in 1820. Thomas Hammett has been in charge since 1905 at this post. He has a small garden and grows some fine vegetables. Regarding the winter, he states that the average snowfall is about 5 feet, the lake freezing over about November 1st. The Indian village is situated close to the post, just north of the Long Lake River. There are about ninety-eight left of the Sikanni, who hunt and trade here. These Indians are dying off fast. They are a meat-eating people and hunt all the year round. The men usually trap on the Parsnip River in the fall and winter and sometimes fish in summer. Due to the activity of these hunters the big game is pretty well cleaned out of this section. The beaver and small fur-bearing animals are becoming scarce for the same reason. The streams and lakes, however, abound with fish, trout, and chub, which will keep them from actual starvation.

Fort McLeod is on the route of the fur trade from the Peace to the Fraser. The post, first of the fur-trading stations in the Northern Interior, was built in 1805 by James McDougall. The lake and post was named in honour of Archibald Norman McLeod, of the North-west Company. The post was first known as Trout Lake House, then Fort McDougall, La Malice Fort, and later Fort McLeod. It is the oldest of the posts, having been the first trading-fort erected by the fur-hunters west of the Rockies. Sir Alexander Mackenzie and James Finlay ascended the Peace and Parsnip Rivers, the former in 1793, the latter in 1797; he examined the Finlay, to which he gave his name, and then proceeded up the Parsnip and Pack Rivers to McLeod Lake. Simon Fraser followed in 1805 shortly after McDougall established Fort McLeod, and returning to the Rocky Mountain Portage he built the Rocky Mountain House, which has since given way to the post at Hudson Hope.

In the days before the steel of the Grand Trunk Pacific was laid, big flat boats were towed up the Fraser River from Soda Creek, where their freights were assembled by wagon over the Cariboo Road, to Giscome Portage, and the merchandise and supplies were hauled over to the Crooked River, where boats and canoes were used

to transport them to McLeod Lake Post, and from there down the Pack and Parsnip Rivers to the Peace, and from Rocky Mountain Portage, where a post was established by the Hudson's Bay Company in 1805, the voyageurs and traders worked up-river with the pelts and furs secured in trade with the Indians. Traders at Soda Creek carried on business to the Rockies by this route. Now the railroad has reached the Fraser River, and the Pacific Great Eastern, being completed up that river to Fort George, is projected to the Peace.

THE HAZELTON ROUTE.

Another trade route was that from Hazelton and the Skeena. The river-steamers of the Hudson's Bay Company, which have disappeared from the river following the construction of the railroad, carried passengers and goods to Hazelton from Port Essington; from Hazelton to Fort Babine, at the head of Babine Lake, pack-trains travelled by trail; canoes and flat-bottomed boats voyaged up Babine Lake, and thence the journey was made over a portage of twelve miles by wagon to Stuart Lake, on which canoes and boats plied to Fort St. James, at the outlet of the lake, 150 miles from Hazelton. A trail about eighty-five miles long runs from Fort St. James to McLeod Lake Post, over which cattle can be driven. This trail reaches McLeod Lake Post by way of Carp and Long Lakes and Long River, at the south of the Peace River Land Recording Division.

CARP LAKE.

Carp Lake has an altitude of 2,750 feet and flows into Long Lake. The trail south-west from it crosses over a generally flat country, with ridges and terraces of sand and gravel. It formerly crossed Carp Lake at the narrows, but, as now travelled, runs along the hillside to the north of the lake. Long Lake River, about 25 feet wide by 2 feet deep at the mouth, is sluggish near where the trail crosses, but a short distance down becomes rapid, and within half a mile offers a great amount of latent water-power; it drops by a succession of rapids and falls through a vertical height of about 200 feet, and from here flows rapidly in a trough-like valley. The trail runs over gravel benches north-east of the valley and some 300 feet higher, gradually descending over a series of terraces until it crosses the river near McLeod Lake.

This trail is the old Hudson's Bay route, and from Fort McLeod continues to Twodia Lake and Parsnip River, crossing it a mile and a quarter above the Missinchinka, and thence by way of this river to Pine River Pass, 2,850 feet, on to Hudson Hope and Fort St. John, mainly by way of the South Pine River. The country passed over between Fort St. James and McLeod Lake Post is, generally speaking, a rolling plateau with an altitude varying from 2,600 to 3,000 feet, with gravel and sand ridges and terraces, the surface being gently undulating. The soil consists of gravel, sand, and clay.

VICINITY OF McLEOD LAKE POST.

Around McLeod Lake is a narrow margin of flat land, sand and gravel, covered only superficially with mould and silt, which, while productive of a fine crop of grass, etc., is not deep enough for successful cultivation. On the west side of the lake, back from the flat bottom land, the hills rise gradually to the plateau level, the whole being densely wooded with poplar, cottonwood, small spruce, and balsam. On the east side of the lake the hills rise somewhat more rapidly to a height of about 600 feet above the lake, and are wooded with spruce of fair size; this side of the lake having seemingly escaped the general conflagration which denuded the plateau to the west.

G. E. Townshend, Forest Ranger, who made a report on this section in 1913, said: "At Fort McLeod I ascended the mountains to the north-east of the post, a distance of three miles, to get a view of the surrounding country. These mountains are burned clean and no growth of any sort exists at present, the soil itself having been destroyed. Looking to the north-east towards the Missinchinka River and farther on to Pine River Pass, fire has taken everything before it, and, as yet, slight

signs of new growths appear. To the north and north-west, looking down the valley of the Parsnip River for thirty miles, the country has a rough and broken appearance; fire seems to have cleaned all but a few isolated patches of timber. Second growth appeared to be poplar and pine. The mountains on the east side, as far as the eye could see, have no sign of growth on the upper slopes, while on the lower small jack-pine and spruce occur. To the west and south-west, looking towards Long Lake, a distance of twenty-five miles, large areas of small jack-pine can be seen; while, more westerly, the country is rolling and broken, covered with jack-pine, spruce, and a small amount of birch."

The geological formation of this section is, superficially, the sand, gravel, and clays of the boulder-clay period, which so completely mask and cover the underlying solid rock formation as to leave very few exposures visible, and these are entirely of sedimentary origin, limestones, sandstones, mica, schists, etc., probably a part of the main Rocky Mountain formation. This continues down the valleys to the Peace.

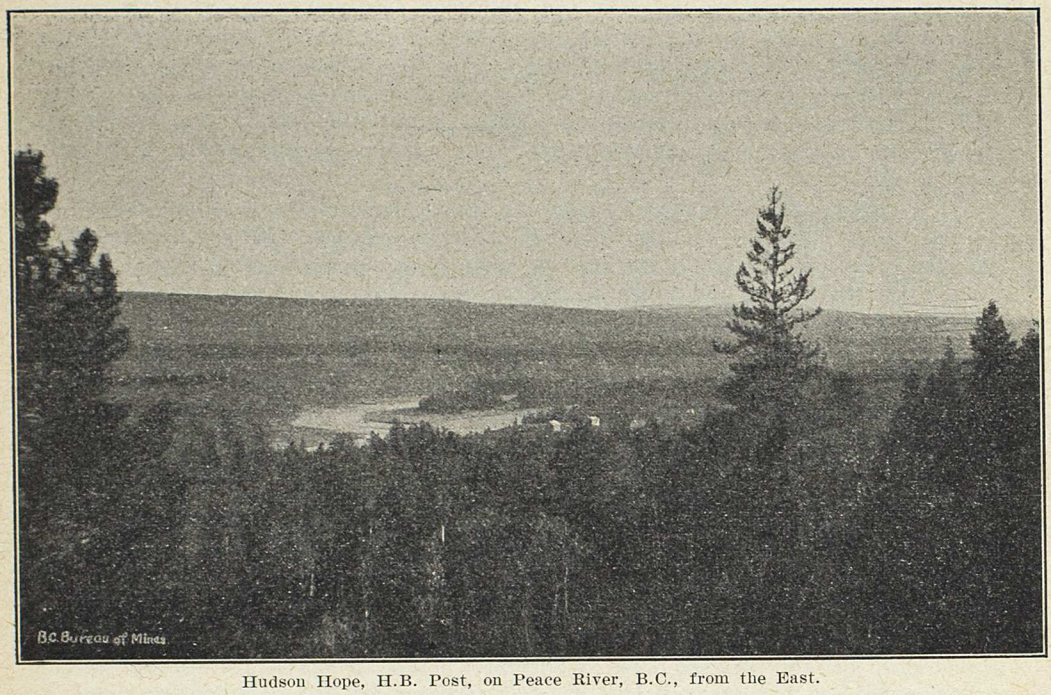
About two miles south of McLeod Lake Post is a marshy spruce and willow flat containing about 2,000 acres. Horse Lake is about six miles south-west from the Hudson's Bay Post, and from there, extending for about fifteen miles between the range of hills along the lake and a parallel one about five or six miles west, is a strip of rolling poplar land about two miles in width. A ridge runs back from the lake, rising from the marshy spruce and willow flat, and continues along from two to three miles back to close in to the Pack River at Twodia Lake, about five miles below McLeod Lake Post. Westerly for about two and a half to three miles from the end of McLeod Lake to the ridge is a cottonwood and spruce flat, with about 6,000 acres of fairly good land extending north along the Pack River as far as Twodia Lake. West of this the country is undulating and hilly. Game along the rivers flowing into McLeod Lake is not very plentiful, black bear being about the only animal left. For the fisherman the rivers cannot be surpassed, trout weighing from ½ to 2 lb. being taken with flies almost as fast as they can be thrown into the water.

THE PACK RIVER.

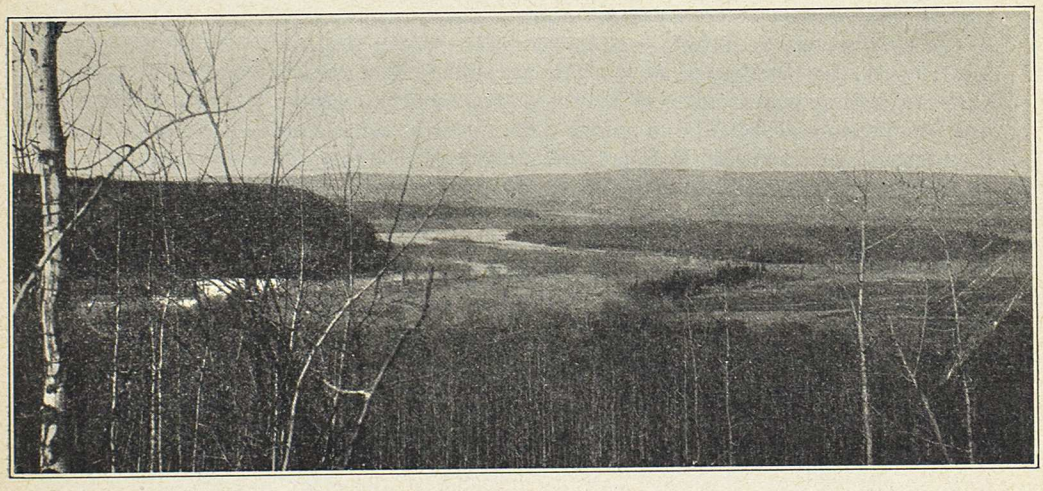
The Pack River flows out of McLeod Lake and joins the Parsnip 17¼ miles away. It is a shallow, winding, swift stream, with current at the rate of two miles and three-quarters an hour and width of 100 to 150 feet, with shallow rapids. About five miles from Fort McLeod it expands into Twodia Lake, about two miles long and as many wide. At low water the Pack River contains little more than sufficient water to take a loaded canoe over the numerous rapids. The channel is frequently split by islands, in which subdivision the water becomes, in late summer, very shallow. The difficulties mentioned, with log-jams and "sweepers"—trees that have been undermined on the banks and fallen into the stream with their roots still attached to the shore—render canoeing dangerous for inexperienced men. Below Twodia Lake the river is deeper. The first part is a succession of rapids, and then the river flows more quietly between well-wooded banks, chiefly covered with cottonwood. Trout abounds in the river. There is little merchantable timber, except near the junction with the Parsnip, where possibly three to four sections of good spruce and pine might be obtained. There are a few scattered pieces of good land and many jack-pine flats along the river.

From Twodia Lake the land between the Pack and Parsnip Rivers is low-lying. From the lake there is a short portage trail to the Parsnip. The country to the west between the lake and the junction of the Pack and Parsnip is generally rolling, timbered with jack-pine and spruce, good for tie timber.

The junction of the Pack and Parsnip Rivers is in latitude 55° 12′ north, at an elevation of 2,225 feet. Both rivers are placid and smooth at the junction, running between banks of gravel from 8 to 10 feet high, back of which are flats covered with very large cottonwood-trees; and here the Indians of the district make most of their large canoes. The waters of the Pack are yellowish, showing their swamp origin, while those of the Parsnip are green, produced from melting snow and ice on the main range of the Rockies, along the base of which the river flows.



Hudson Hope, H.B. Post, on Peace River, B.C., from the East.



Looking up Halfway River.

THE PARSNIP RIVER.

Heading in a small lake from which a short portage crosses the divide to the Bad River, a tributary of the North Fork of the Fraser River—a route sometimes adopted en route to and from the Peace River country—the Parsnip River reaches a width of 400 feet at the junction with the Pack. Several large tributaries join it above the junction from the east, the largest being the Missinchinka and the Misschinsinlika. The former takes its rise in Pine River Pass and, running westerly for about twenty miles, empties into the Parsnip River, averaging about 30 feet in width. Flour gold is panned along this stream. The Nation River is the largest of the feeders from the west, entering about thirty miles above the junction with the Pack River.

The Parsnip River, so named on account of the profuse growth of cow-parsnips on the banks, takes a winding course in a north-westerly direction towards its junction with the Finlay, a distance of approximately eighty-nine miles. It is broken up with sloughs and numerous islands, but free from any bad rocks or drift-piles, and is good for boats and canoes at any stage of the water.

The Parsnip Valley from opposite the Pack has a width of about eight miles, narrowing down to two miles. The river-bottom varies in width from half to a mile along its entire length, the most of which is timbered heavily with small spruce and cottonwood. On the east side the valley has practically all been burned over, with the exception of a few patches here and there.

Above the mouth of the Pack River on the east of the Parsnip is a wide flat, slightly rolling and timbered lightly with pine, spruce, and poplar, extending for six to eight miles to the foot-hills of the Rocky Mountains. The low flat along the river has an average width of about a mile between benches about 150 feet high, the river winding from side to side between these benches.

About a quarter of a mile below the junction a creek about 15 feet wide and 1 foot deep enters from the west, about three miles up which are several small seams of lignite. On the west side a range of snow-capped mountains runs about parallel to the river about twenty or thirty miles back, and the intervening country is hilly and densely timbered with spruce, poplar, and small jack-pine. The soil is sandy and gravelly. Five miles from the junction on this side, flats covered with spruce, jack-pine, and some cottonwood extend back for two or three miles to merge into the hilly country. Below these flats a small creek about 10 feet wide enters, and here a poplar-flat, burnt over and grown with peavine and brush, extends back from half to two miles, for a mile running into spruce and poplar flats, which continue for seven or eight miles farther down. There are numerous flats reaching back to the rolling country, generally from half to a mile wide to the Nation River.

The country contiguous to the Parsnip Valley is generally rough and broken, with benches varying from 50 to 250 feet rising from the valley, covered with second growth of jack-pine, birch, and poplar. On the west side down to the Nation River the country near the valley is rough and broken. Continuing down the Parsnip from the Nation River, the west side is rough, a low range of hills following the river for a distance of sixteen miles, these hills being rough and broken, and heavily timbered with scrub pine, spruce, and birch, none of which is of much value. Then for ten miles there is a strip of spruce, mostly on flats, behind which is a muskeg, extending north and south for from twelve to fourteen miles, with width of from one to two miles.

BELOW THE NATION RIVER.

Below the junction of the Nation River the Parsnip River is very tortuous; its bed becomes much wider, with numerous sloughs and back channels, at high water forming islands densely wooded with poplar, and, on the older islands, with spruce. The hills on the west of the river, extending down-stream for about sixteen miles, rise to a height of about 700 to 800 feet, and on the western side of the range the valley runs back to the main range, which forms the western boundary of the

Parsnip and Finlay Valleys. With the exception of the muskeg, previously referred to, which commences at a small lake about a mile and a half north of the Nation River and follows the course of a stream which runs from this lake into the Parsnip, which it enters about seventeen miles from the mouth of the Nation River, the valley appears to be generally rough and heavily timbered.

From the mouth of this stream northerly to the Omineca River lies a very large stretch of generally level rolling country, timbered lightly with spruce, pine, poplar, and birch. This tract is bounded on the east by the Parsnip and Finlay Rivers, and on the west by a high range of snow-mountains, and is about fifteen miles in average width. The soil is chiefly a light sandy loam.

On the east side of the Parsnip, below the mouth of the Nation River, a range of low hills, not so rough as those on the west side, follows the river as far as its junction with the Finlay. Between this range and the foot-hills of the Rocky Mountains lies a low valley, about four to five miles in width opposite the mouth of the Nation, and gradually narrowing to the north, its width opposite the Finlay being about two miles. This valley is generally level, though broken by small hills, and is timbered chiefly with small pine; the soil is a light sandy loam.

As it nears the junction with the Finlay the Parsnip runs close to the Rocky Mountains; it is not more than two or three miles from Mount Selwyn, a high peak (6,220 feet) which stands, sentinel-like, at the gateway by which the united streams, the Peace River, flows through the mountain-range.

AGRICULTURAL LAND IN PARSNIP AND FINLAY VALLEYS.

The Parsnip and Finlay Valleys contain a large area of undeveloped agricultural land, and a great future is predicted for them by surveyors. F. C. Swannell, B.C.L.S., who made an exploratory survey covering a large area in the Omineca District, and including these valleys, in 1913, said: "I have no hesitation in predicting a great future for the Finlay-Parsnip Valley. Between the mouth of the Ingenika on the north and the confluence of the Nation River with the Parsnip on the south, I would conservatively estimate the good land at 500,000 acres. The Finlay Valley varies from six to eight miles in breadth, the country being flat and the soil good right up to the mountain-ranges paralleling the valley on both sides. The soil is black loam in the river-bottoms and sandy or clayey loam back of the first bench. Originally the valley was heavily timbered, spruce predominating. Large areas have, however, been burnt over and reforested with pine, poplar, willow, and some birch. At Collins House a large tract of almost open bottom land was observed. The river, which averages 250 yards in width, is continually changing its channel; in many cases there are several channels and long sloughs, once main channels, which run for miles. At high-water the erosion is very rapid, as evidenced by the large drift-piles which are a characteristic feature of this river; one in particular, over half a mile long, being noted. For fifteen miles above the mouth of the Ospika the current is very slack; elsewhere it would average three miles per hour. From the mouth to Deserters' Canyon there are no rapids, and navigation by light-draught river-steamer would be easy at all stages of the water. To the west, along the Lower Parsnip and as far up the Finlay as the Omineca, the Wolverine Mountains lie over fifteen miles back, the intervening country being flat, mostly lightly timbered with jack-pine. There are very few meadows or lakes in this area.

SETTLEMENT AT FINLAY JUNCTION.

"At Finlay Junction two stores were started this year and over a dozen pre-emptors have acquired holdings. A most important settlement will, I am certain, soon centre here owing to its strategic position at the junction of the three great rivers, the Peace, Parsnip, and Finlay. At present the settlers are handicapped by having to bring in their supplies by way of Giscome Portage from Fort George. The placing of a steamboat on the Upper Peace would, I am convinced, result in this section settling up very rapidly. A trail, or, better, a wagon-road, to Manson Creek

would provide an immediate market for the first settlers, as at present all supplies for the placer mines are packed in from Hazelton at the almost prohibitive price of 15 cents per pound."

There is a steamer service to Hudson Hope and navigation is possible between the east end of the Rocky Mountain Canyon and the Finlay and Parsnip.

NATION RIVER AND NATION LAKE BASIN.

The Nation River, running north-east, swift and shallow, with depth of about 2 feet and average width of 150 to 200 feet, enters the Parsnip at latitude 55° 35′, the elevation at the mouth being 2,100 feet. This river, largest of the tributaries of the Parsnip, rises in the lake-basin between the Stuart Lake and Omineca Districts about sixty miles south-west.

In the lake-basin and tributary areas there are, it is estimated by surveyors, about 300,000 acres, of which about 85 per cent. is available for various farming purposes. The river at its outlet from the lower of the chain of lakes is a series of boulder-strewn rapids for twelve miles, then it becomes a large stream with clear water for much of its length. There are two rock canyons and a number of rapids in the lower fifteen miles.

Generally the country traversed by the Nation River, differing from the lake-basin at its headwaters, is rough and broken, excepting a few flats along the river. Looking up the valley of the Nation from the Parsnip, a range of mountains is seen at a distance of some twenty to twenty-five miles. This range, part of that which parallels the Parsnip to the west, south of the Nation River, has some peaks with estimated altitude of 6,000 feet.

From the Parsnip to the foot-hills of this range the country rises by a succession of gravel and clay benches, the highest of which is some 500 feet above the river.

NATION LAKES DISTRICT.

J. M. Milligan, B.C.L.S., who made surveys in 1913 in the Nation Lake basin, reports that it compares very favourably in the matter of agricultural possibilities and natural advantages with other valleys in the Northern Interior. Access to the valley of the Nation Lakes is at present most easily effected by pack-trail over the old and romantic Omineca Trail, a distrance of sixty miles from Fort St. James, a Hudson's Bay Post, at the foot of Stuart Lake. This trail was constructed about forty-five years ago, but following the days of the gold-rush has gradually fallen into disuse. It was reconstructed under Colonel Wright about 1900 for the purpose of getting in hydraulic machinery to Manson Creek goldfields, but was apparently not used very much. In 1912 it was reopened and cleared out, and except for the loss of a few creek-bridges, which were destroyed by fire, is now in its original state. With a few minor exceptions, firm dry ground prevails for its full length, and since there are no perceptible summits to overcome, it could, with a few deviations in the first twenty-five miles, be converted into an excellent wagon-road.

The Stuart Lake Trading and Transportation Company's stores and also those of the Hudson's Bay Company at Fort St. James provide a large country with all the necessary supplies, and at comparatively reasonable prices. Fort St. James is most easily reached from either of two points on the Grand Trunk Pacific. From Fort Fraser by pack-trail, thirty-five miles; or from Milne's Landing, on the Nechako River, a distance of forty-three miles by wagon-road. It is reported that a river-boat is now being built to carry passengers and freight up the Stuart River to Fort St. James, and farther up the chain of great lakes and rivers as development proceeds. Transportation facilities to Nation Lakes would by this means be materially simplified, as boats could ply to some point on Middle River, and thence by means of a trail or road to be constructed over the intervening low land access would be gained to the second or Cho-eta-bon Lake. It would appear, on the whole, that it is only a question of time before transportation into this country will no longer be attended with the difficulties that are attached to it at the present time.

MAIN VALLEY OF THE NATION LAKES.

The main valley of the Nation Lakes extends directly east and west for a distance of about sixty miles, and with its tributary areas comprises, roughly, 300,000 acres, 85 per cent. of which is available for the various purposes of farming. In considering the possible waste areas the same conditions prevail here as elsewhere, that where three or four adjoining quarter-sections may carry a high percentage of waste land, other and surrounding quarters will be entirely free.

The width of the valley varies considerably, and is narrowest along the lakes, where the land at points is more or less rough, and even rugged where the hills approach the lakes. Speaking of the lands as a whole, and particularly where there are considerable areas, the surface of the ground is of an even character, as a study of the contour will disclose, and is broken here and there by the cuts of the larger creeks.

The Nation River drainage-basin is composed of four large lakes fed by numerous streams draining the network of smaller lakes behind. The two lower lakes, the Nation Lakes proper, are each about twenty miles long, connected by a river a mile and a half long. They lie east and west; the two upper lakes, Indata and Tsayta, are eight to twelve miles long, lying north and west respectively. As the connecting rivers are shallow, swift, and narrow, intercommunication by steamboat is not practicable. The Nation River, which averages 200 feet in width, is very swift, the upper twelve miles being a series of boulder-strewn rapids.

SOUTH-WESTERN BORDER OF THE DIVISION.

Taking the triangle with sides formed by the Manson Creek Trail on the east, the parallel of 55° 30′ on the north, and the line of Tatla, Middle River, Tremblay, and Stuart Lake as hypotenuse, we have an area of, roughly, 2,500 square miles, the general level of this whole country being between 2,200 and 2,600 feet above sea-level. The terrain is broken by many isolated mountain-ranges, the most important one being along the east side of Tatla Lake, peaks of which run about 6,000 feet. The Blanchet Range extends for fifteen miles between the North and West Arms of Tatla Lake, and has several peaks 6,500 feet altitude. A long flat-topped range runs along to the north of the Nation Lakes, merging into the Omineca Mountains proper. Mount Pope (4,450 feet) and high isolated mountains in the vicinity of Pinchi, Tezzon, and Inzana Lakes comprise most of the remaining mountains. Roughly speaking, 20 per cent. of the triangle is high mountains, 30 per cent. ridges and hills, 10 per cent. lake, and the remainder undulating country.

This undulating area, with an average elevation of 2,500 feet, contains about 400 sections of good agricultural land, as far as cruised; the balance of the flat country being jack-pine flats more or less gravelly, and crossed by gravel moraine ridges. The whole plateau country is well watered, there being a maze of small lakes and connecting streams. Meadows and willow bottoms are fairly numerous, but there is almost an entire absence of muskeg, the meadows, although often wet, having hard bottom almost invariably. The many lakes make this section of country of great scenic beauty, the water being crystal clear, and the larger lakes having mile after mile of fine pebbly beach.

About 300 square miles only of this triangular area carries the original heavy timber, mostly spruce, with balsam predominating at the higher altitudes. The flat country, once heavily timbered, has twice been burnt over during the last forty years. Indeed, this section has suffered more from forest fires than any other part of British Columbia. Much of the burnt area is now encumbered with dead and fallen timber and young growth, while areas, once burnt clean, now carry a growth of jack-pine, the only trace of the original spruce forest being a few burnt stumps, and scattered clumps of timber along the watercourses.

The largest area under the original forest, outside of the mountains, lies in the flat country between Lower Nation and Inzana Lakes. This forest is 75 per cent. balsam and 25 per cent. spruce, and would scale 8,000 to 10,000 feet B.M. per acre.

Indications would tend to show that the whole district has been, until a comparatively short time ago, heavily timbered. Large areas have been deforested,

leaving strips of the original coniferous growth, principally along the shores of the lakes and in patches on the surrounding mountains and hills. The most valuable and predominant tree in these timbered areas is the spruce, varying in size from 8 to 30 inches in diameter. A generous proportion of pine, with more or less balsam, is also included. Upon inspection, this timber growth appears to be quite old, as a rule an appreciable percentage having matured, and now showing the first signs of decay. The classification of these lands, therefore, as carrying a sufficient quantity of merchantable timber to bring them within the meaning of "timber lands" is materially affected. Ample supplies of good timber, however, exist to more than supply the requirements of ordinary purposes.

VALLEY HAS BEEN SWEPT BY FIRE.

The major portions of the valley have been swept at different times by fire, the dates of which may roughly be guessed at by the size of the second growth (pine, poplar, willow, alder, spruce), which varies from 6 inches in places to 2 or 3 inches in others. Windfalls are only encountered in portions that have escaped the main sweep of the fires, and do not prevail, as a rule, to any extent. These areas lying west and south of the second lake, and south of and along the Nation River, carry a very open growth of small pine, poplar, and willow thickets, which renders the proposition of clearing possible at a minimum cost, and almost any particular piece of land readily accessible.

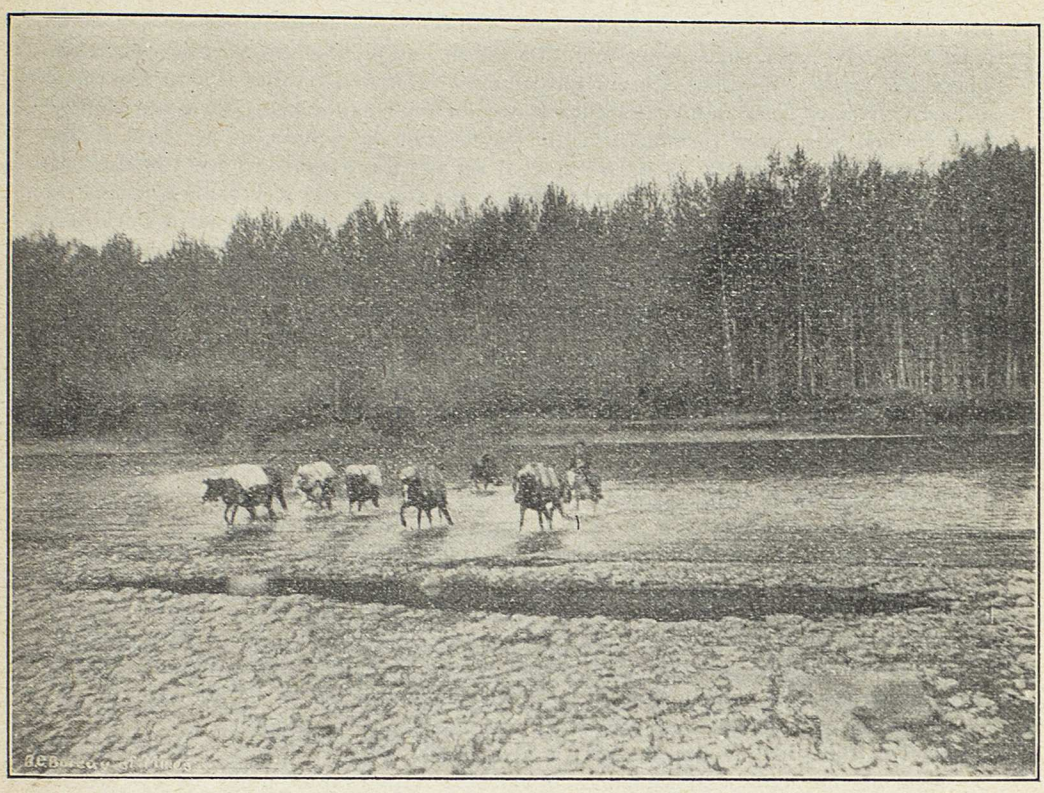
EXCELLENT AND EVENLY DISTRIBUTED WATER-SUPPLIES.

The fact that excellent and evenly distributed water-supplies are to be found practically anywhere is in itself a very attractive feature of the country. Almost every quarter-section in the surveyed area is amply supplied by one or more of the numerous creeks, or borders on the shores of a lake. On the larger plateaux, where dry areas may be expected to exist, the network of smaller lakes with their connecting creeks provide an ample supply within easy reach. As a rule, these creeks are hardly adapted for the economical development of water-power, but sites may be found that will hold attractive possibilities.

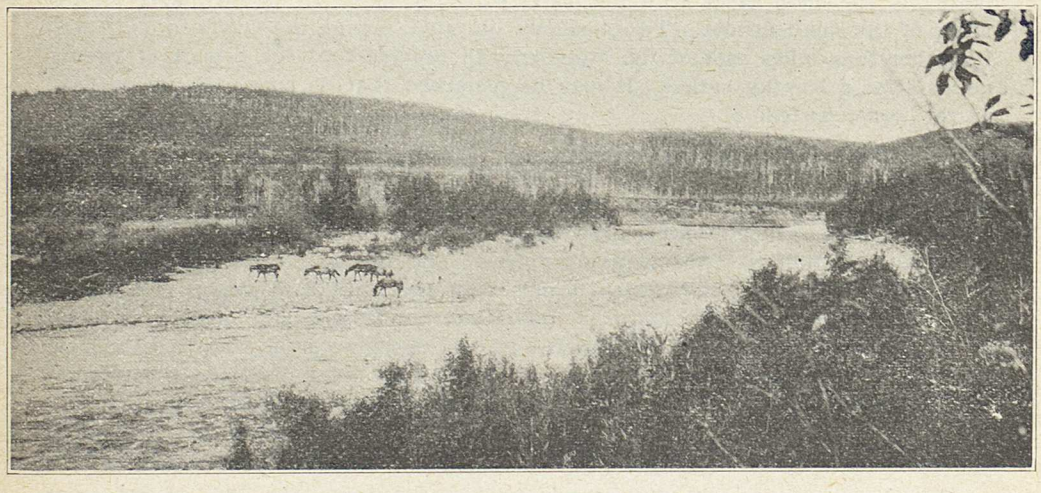
SOIL GENERALLY A SANDY LOAM.

The soil of the Nation Lake basin may be characterized generally as a sandy loam; only along the lower levels of the lakes and river is clay noticed to any extent. Along the undulating areas immediately surrounding the lakes, where, as stated before, most of the timber is found, the soil is a loose, light-brown loam. This gives way in places to soil of a gravelly nature, containing varying quantities of loose rock or "free stone," on the higher ground. On the bench lands or plateaux, where the main blocks lie, the prevailing soil is a finely divided, dark-brown or reddish sandy loam. This is of considerable depth in certain areas, as is evidenced by the cuts along the creeks and main river. Large deposits of a whitish silt, probably glacial in origin, are encountered mainly along the Nation River, where cut-banks of 50 to 100 feet in height have been noted. Other sections carry a soil that is more or less gravelly in parts and contains small loose boulders. Broadly speaking, it may be said that the soils are of a very desirable nature, and the gravelly or rocky areas, where met with, are in the minority, and are so distributed as to result in no depreciation to any particular section of land. As to what agricultural purposes these soils may be best adapted would be determined as a result of more or less experiment in the future. On every hand is evidence that the loams are very fertile. A vigorous growth of grasses, shrubs, and weeds spring up where fire has opened the country and seed has found its way. Special mention must be made of the smaller wild fruits, which, where found, grow most luxuriantly and bear heavily. Among these is included black and red currants, raspberries, and gooseberries, etc.

In a block of 50,000 acres surveyed for pre-emption by J. M. Milligan, B.C.L.S., lying south of and along the Nation River, containing a large proportion of excellent agricultural land, a number of wet swamps on muskeg land were encountered. As



Crossing South Pine River, Four Miles from Mouth.



Halfway River, Peace River District.

a general rule, these wet lands either carry a growth of small willow and swamp-grasses, or the pure grass without willow, and may perhaps with more truth, in many cases, be called wet meadows rather than swamps. Fewer in number, but generally more extensive in area, are the spruce swamps or muskegs, some of which are covered with a growth of spruce with willow thickets; while others are more open with deep moss, such as are found in almost any part of the Northern Interior. These wet lands or swamps are not individually extensive, and, except in the cases of small strips of boggy lands along the shores of the smaller lakes, have apparently been formed because of insufficient outlet to the surface waters, as a result of the blocking-up of the outlet. This is effected by natural causes where the flow of water is small, but in the majority of cases, where there are well-defined creeks, it is evident that the water has been dammed back by beavers, as extensive workings, some very old and others new, are to be found anywhere. As a rule, the contour of the ground is such as to permit of natural drainage, and, being shallow and of firm bottom, these wet lands lend themselves, with little labour, to complete drainage.

DRAINAGE NOT DIFFICULT.

These areas must be drained before they are available for the best purposes of farming, and as this may be accomplished in the majority of cases both expeditiously and inexpensively, and considering, also, the advantages of good soil, easily cleared or already open land, it is reasonable to suppose that these wet lands will, as a rule, prove attractive to intending settlers. Perhaps in speaking of the agricultural possibilities of the country generally, and to what kinds or purposes of farming it is best suited, more or less caution should be used in view of the fact that the country has been under observation for such a short time and only during the warm season; although it is generally conceded that the country as a whole is most advantageous to the comparatively small farmer of the future, and lends itself readily to the various purposes of mixed farming. The following remarks in addition to the foregoing may help to form an opinion in the matter.

The altitude of the main plateaux is about 2,500 feet, or, roughly, 100 feet above the level of the lakes, and compares favourably with that of other valleys where successful farming is being carried on. The same remarks may be made of the latitude, which averages 55.10 degrees north.

Generally speaking, it could not be said of the country in its present state that it is well adapted for stock-raising. A good percentage of the surrounding hillsides are open and carry a growth of weeds and grass, but would require to be seeded down. The winter season would also perhaps be a little long. The prevailing open nature of the main areas with the many scattered meadows would amply fill the needs of the small farmer. Two meadows, in mind, one on the Omineca Trail and the other four miles east of the crossing, will provide feed for a pack of twenty animals for a lengthy period. It may be remarked that no poisonous weeds have as yet been reported.

MANSON CREEK TRAIL SOUTH FROM NATION RIVER.

The Manson Creek Trail southward from Nation River traverses much undulating to rolling, jack-pine country, about 20 per cent. of which has fair soil, the balance being sandy and intersected by gravelly ridges. The choicest large area of good land lay along the Inzana Trail, which branches off the main trail twenty-eight miles from Fort St. James. The country is undulating to rolling, mostly brule, with young growth of poplar and willow. Several of the meadows seen were a couple of hundred acres in area, and one large willow bottom covered a couple of square miles. The soil was loam in the lowlands and sandy loam on the ridges.

NATURAL ATTRACTIONS, FISH AND GAME.

The scenery along the lakes especially is beautiful, and the wide and shelving stretches of beach, with their many-coloured sands, will prove an ever-desirable attraction. In the rivers and lakes and their surrounding hills and mountains,

ample scope is provided for the fisherman and hunter. At the intake of the Nation River is a particularly favourable spot for fly or bait fishing. Hundreds of rainbow trout, including some Arctic and silver trout, have been caught here in a few hours. In the lakes may be caught the larger lake trout and Dolly Vardon, the whitefish and ling. Black bear are fairly common almost anywhere in the valley, while brown and grizzly bear are to be hunted on the higher hills. Moose-tracks have been seen towards the easterly limits, though none have been procured so far, and caribou are known to herd on the higher plateaux. Early last spring seventeen caribou were shot in "one yard" by Indian hunters. Although tracks were often met with at different points during survey operations, no deer were seen until last fall, when eight were observed travelling together. The opportunities offered the trapper are many. At the present time only a few Indians are reaping good profit trapping the numerous species of fur-bearing animals. These include the beaver, mink, marten, otter, weasel, lynx, and large numbers of musk-rats. Many ground-hogs—a species of marmot—are taken every fall from the open mountain-sides. Although their fur is more or less valuable, they are obtained chiefly for their fatty meats, which, being dried and smoked, provide food during the trapping season later on. The various species of grouse have been plentiful during the past two seasons, and good shooting is provided each fall when the ducks and geese pass along on their way south.

CLIMATIC CONDITIONS.

Actual records as to climatic conditions are necessarily meagre, but the weather experienced during 1912 and 1913 was excellent and favourable to survey operations. The mean daily temperatures for the summer months of 1913 are as follows: June, 55 degrees; July, 55.2 degrees; August, 58 degrees; September, 47 degrees; October, 37 degrees. The highest temperature recorded was on July 22nd with the thermometer at 90 degrees, and the lowest on October 20th at 10 degrees.

Another matter worthy of note is the apparent absence in a high degree of summer frosts. Further records would, of course, be necessary to verify this, but the prevailing impression so far is that these much-dreaded summer frosts are light. The first frost recorded was on the night of September 26th, when the thermometer registered 26 degrees. The presence of the large bodies of lake-waters, the open nature of the burnt areas, and the heat-retaining powers of the sandy loams, also the fact that there are always light breezes or winds, would bear out this impression. Mention might also be made of the general absence of overhanging mountains, and also that there are no glaciers which might have a tendency to encourage frosts.

Winds in this country seem to be more continuous than is the rule elsewhere, and almost invariably blow from the west during the summer and until September 15th, when they change to the south-east at times. Very heavy thunderstorms were experienced during the first part of September. Although flurries of snow fell about October 15th, the winter snows fall to stay about the end of the month or later, the average depth of the snow during the winter months being about 3 or 4 feet on the lower levels, which by report is all off by May 1st. Where the growth is of such an open character as to allow free access to the sun's rays, the snow has been known to pass off about April 1st.

The presence of hot springs at the west end of the second lake will no doubt prove of future value.

PROSPECTED FOR GOLD-BEARING GRAVELS.

As mentioned before, this country was thoroughly prospected years ago for gold-bearing gravels, but no information is at hand to show that any quantity of the precious metal was ever taken out. At the present time colours may be found in most of the larger creeks, and especially on the bars of the Nation River, where work was carried on until comparatively recent years. All of which would tend to bear out the opinion that further prospecting might be attended with some results.

WHAT THE FUTURE OFFERS TO THE PIONEER.

In contemplating the foregoing remarks regarding the Nation Lake country, one can confidently anticipate what the future offers to the pioneer. Richly endowed by nature, with soil that can be rendered highly productive at a moderate initial cost, and with conditions generally that are particularly suitable to mixed farming, settlement must be rapid as the various advantages of the country become known, and transportation facilities secured for the influx of land-seekers to the Province.

THE OMINECA DISTRICT.

In the Omineca District, north of the Nation Lake basin, explorations made in 1913 by F. C. Swannell, B.C.L.S., and A. M. O. Gold, of the Forest Branch, covered the area between the Nation Lakes on the south, the western boundary of the land division, the Stranger (or Meslinka) River and Police Trail to Fort Grahame on the north, and the Finlay and Parsnip Valleys on the east.

In a recapitulation of the agricultural areas in the Omineca District within those borders, Mr. Swannell estimates that the territory covered by him contains over a million acres of good agricultural land, apportioned as follows:—

	Acres.
Finlay and Parsnip Valleys	600,000
Omineca Valley	80,000
Stranger River Valley	40,000
Ooslinka River Valley	20,000
Driftwood River Valley	25,000
North Tacla Lake	25,000
Nation Lakes and tributary country	250,000

Mr. Gold says that, of the 4,075 square miles explored by him, about 815.5 square miles, or 521,950 acres, may be classed as farming land; that is to say, this extent of land is situated at an elevation under 2,800 feet on fairly flat or undulating country containing soil of such quality as will produce any kind of farm crop if subjected to scientific cultivation and proper management. He considers that stock-raising and dairying are the branches of farming most suitable to this region, there being large tracts of open meadow and grazing pasture distributed throughout the area, and apart from these over 1,000 square miles of land suitable for grazing purposes. Mr. Gold did not include the Finlay, Parsnip, and Nation Valleys in the scope of his report, but included some lands east of the boundary of the division in the Hazelton Land Recording Division.

RICH IN MINERALS.

The whole of the Omineca District is highly mineralized. After the first period of excitement in the seventies, only spasmodic attention has been paid to it owing to the rich strikes reported in other parts of Cassiar and the Yukon. There are only a small band of miners now in the district. The placer-workings are, however, suitable for organized and well-equipped outfits. In the district is found gold, copper, galena, native silver, and mica. The gold is of high quality, and the galena has assayed as high as 120 oz. to the ton. The high cost of transportation has handicapped mining, and with the completion of the wagon-road between Tom Creek and Tacla Lake, and the proposed steamboat navigation between Fort George and Tacla Lake, conditions will be greatly improved, and it will then be possible to bring modern machinery into the country, while provisions should be landed at Tom Creek for from 2 to 3 cents per pound as compared with ten times that amount at present. Tom Creek, Silver Creek, Quartz Creek, Vital Creek, and other streams which were worked in the seventies and still carry gold, but in such quantities that it does not pay to work them by the crude hand-made machinery used by the pioneers, of which remains can be seen at Tom Creek, will be worked again when the transportation facilities are provided. On the Ingenika River and McConnell Creek placers exist, and in many parts of this district the miners have washed fine gold. In 1908 there was a stampede to the Ingenika River.

At present placer-mining is being done on Manson and Germansen Creeks and some quartz-mining near the Fall River. Some forty white men all told were working in this section, and a well-equipped prospecting party of five men was encountered on the Stranger River. Much ground known to be auriferous will remain unworked until transportation facilities are improved. At present it is very difficult to get supplies or machinery in from outside, every pound having to come in by pack-horse or toboggan. In spite of this handicap, several hydraulic plants and two sawmills have been installed, although the latter have not been worked for some years.

Easy communication with the Peace River, or a wagon-road joining the one now building from Tacla Lake to Tom Creek, would increase the mining activity in this region tenfold. Machinery could be brought to either of these points of entry by light-draught steamboats.

Throughout the district are several places where a large amount of water-power could be developed, besides numerous small power-sites; in fact, enough water to supply households, grist-mills, small sawmills, etc., can be obtained almost anywhere in the district.

Roughly, the area explored by Mr. Swannell in 1913 is that region which, since about 1870, has been known as the Omineca District. It is bounded on the south by the Nation Lakes and River, and on the north by latitude 56° 30′, the eastern limit being the great Intermontane Valley traversed by the Finlay and Parsnip Rivers; while the similar great depression occupied by Connelly Lake, Driftwood River, and North Tacla Lake is its western boundary. The whole area is exceedingly mountainous, the only large areas of level country being in the two great valleys before mentioned in the drainage-basin of the Nation River, and, to a lesser extent, on the Omineca and its branches.

ACCESSIBILITY.

The Omineca District is now entered by pack-trail from Hazelton. From Fort Babine to Manson much of the trail is very stony, with numerous steep pitches, and was very muddy, there being more rain than usual this year. A wagon-road is being built from Tacla Lake to Silver Creek by Mr. Bodine, about ten miles having been slashed and cleared this year. It is reported that a small gasolene-steamer will be put on between Fort George and Tacla next season. During the old mining days supplies were brought in largely from Quesnel to Stuart Lake, and thence by trail to Manson Creek. This trail has not been kept in repair of late years. It is, however, splendidly located, dry, and the feed good, the only steep grade being at Lookout Mountain. A wagon-road could economically be built following this route. No trails enter the Manson Creek region from the east, excepting the Moody Trail from Fort Grahame. This crossed the Omineca below the Black Canyon and crosses the summit of the Wolverine Mountains at an altitude of about 5,500 feet. It is a very poor trail, with much soft ground, fallen timber, and very steep grades over the mountain. A trail having its ultimate object the Parsnip River runs down Manson Creek to a short distance below the Lower Lake. The cutting of this trail through to the Parsnip is very advisable. The country between the end of the trail and the Parsnip is good.

EAST LANDING TO MANSON.

From Tacla Lake the main trail from the East Landing to Manson was cruised, but no good land at all was found, with the exception of large meadows on the summit between Tom Creek and Tacla, and along the head of Kwanika Creek. The altitude of these summit meadows—about 3,900 feet—precludes their use for anything except summer grazing or raising hay.

OLD FALL RIVER AND OLD HOGEM.

A side-trip was also made across the Old Fall River Trail to Old Hogem, on the Omineca River. The trail was in bad shape, having been seldom used since the seventies. The pack-train was taken as far as Diver Lake, where five miles of windfall was encountered. The rest of the trip was made on foot, as it would have taken

five days to cut a horse-trail through. There are small areas of good land and one large meadow on the Tacla slope, while the lower part of Fall River traverses good bottom land, now largely flooded by beaver-dams backing up the small streams feeding Fall River.

Old Hogem was named by the miners of the seventies. Germansen, the discoverer of the Germansen Creek diggings, was called "Old Hog'em" because he charged $45 for a sack of flour ground at Williams Lake from frozen wheat, and for other goods in proportion. When Germansen left another storekeeper came, and his site is now known as New Hogem. A poet of the seventies expressed the situation due to which the places were named as follows:—

"When Germansen first made his strike
On this old roaring river,
Old Hog'em sold his stock of goods
At quite a high old figure;
But now, alas! Old Hog'em gone,
We sit around our camp-fires,
And muse on those once happy days,
For now we've got the vampires."

OMINECA RIVER.

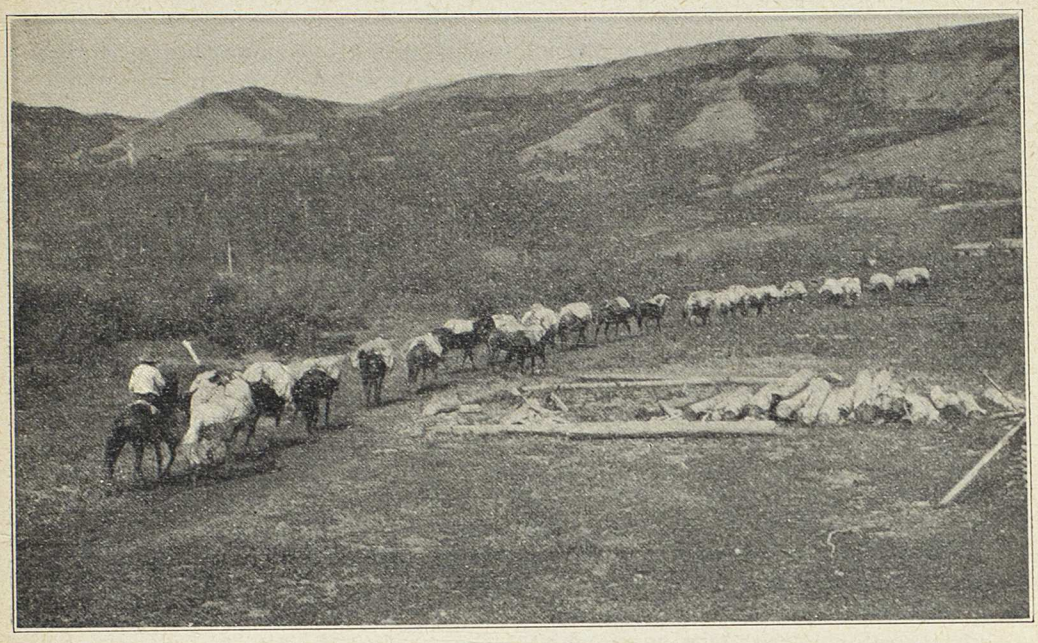
There are several trails from Tacla Lake to the Omineca River, one from the Old Landing on the Old Fall River Trail and up Bates Creek via Sitleka Creek to the river by old Omineca Creek; from Bulkley House, an abandoned Hudson's Bay Post at the head of the Tacla Lake; and a passable trail along the east side of the lake to the Driftwood River, in the basin of which is a large area of good agricultural land, lying in the Hazelton Land Recording Division, leaving it about twenty-five miles from the site of Bulkley House to cross to the Omineca. This trail, leading to the Ingenika, was originally a Sikanni foot-trail over which horses were taken during the Ingenika excitement. It crosses numerous muskegs and early in the season is almost impassable for pack-horses. At the summit are very large meadows affording excellent feed. It was observed during the season that large high-altitude meadows characterize all Omineca passes.

The Omineca is the largest tributary of the Finlay, which it enters about eleven miles from the mouth, cutting through a rocky ridge of gneiss and mica-schist about seven miles in a straight line from its junction with the Finlay. Cutting through this ridge the river runs through the Black Canyon, about a mile in length, and navigable for canoes only at low water. Between this canyon and the Finlay the Omineca is swift and shallow, having spread over a large area, with bars and small islands on each side. It has average width of about three-quarters of a mile and fall of about 8 feet to the mile. The river here runs for several miles through low country exposed to inundations.

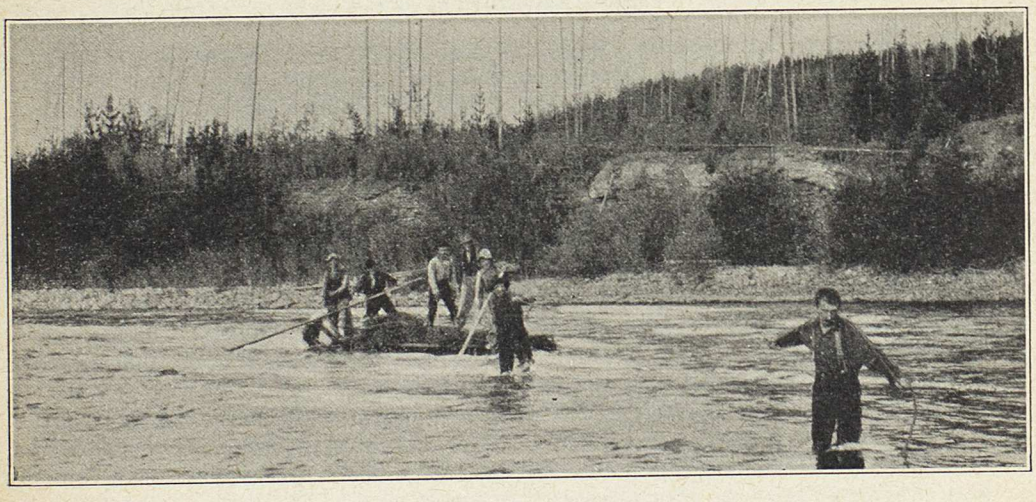
The Omineca takes its source in a small lake in the mountains at the eastern border of the division. At the junction of the Ingenika and Police Trails, the former from Tacla Lake via Driftwood Valley, the latter turning off at the Ingenika ford across the Omineca River en route to Fort Grahame and Fort St. John, the Omineca is a stream 60 feet in width and 15 inches deep at low water, and about 120 feet wide and 6 feet deep at flood. The upper valley is narrow, but beautiful, being diversified by many small meadows and small patches of good land in the loops of the winding stream. For sixteen miles this character is maintained. The river becomes swift then, being doubled in volume by the confluence of the North Fork. The main tributaries are the Stranger (or Mesilinka) River and the Ooslinka River. Mr. Swannell estimates that the valley of the Omineca contains 80,000 acres of agricultural land; the Stranger River Valley, 40,000; and the Ooslinka Valley, 20,000.

THE "BIG KETTLE."

On the slope of a high serrated range to the west of the headwaters of the Omineca is a huge glacier covering three square miles. Seven miles above the ford where the Police and Ingenika Trails cross, the Police Trail leaves the river and



Pack-train on the move, Peace River District.



Fording the Halfway River.

crosses the mountain-range to Connelly Lake. Here, where the trail leaves the river, is a curiosity well worth seeing—the "Big Kettle," which the Indians believe to be inhabited by evil spirits. It is situated close to the Omineca River on a large creek. The "Kettle" itself is at the top of a conical mound about 25 feet in diameter at the base and 15 feet high, and is a vent or fumarole of 6 feet in diameter and perfectly cylindrical, filled to within 5 feet of the rim with a soft red earth resembling hæmatite. Many small birds, mice, several bushy-tailed rats, and a large owl were found dead in the bottom. The Sikanni Indians, who stand much in awe of this place, say that birds flying overhead are mysteriously killed in mid-air. The fumarole emitted strong puffs of sulphurous gas, which, however, lay heaviest in the bottom of the vent. It is difficult to account for the presence of so many dead birds in the bottom of the fumarole, other than by accepting the Indians' statement as correct; as it seems probable that, at times, the emission of gas may be very much stronger and less intermittent. About an acre around the "Kettle" is built up of a spring-deposited rock resembling travertine. Many mineralized springs seep out, forming stagnant pools and oozy patches of reddish and yellow mud.

Below the ford the Omineca is followed by the Police Trail; the valley maintained the same character of intermittent meadows and patches of good land in the loops for sixteen miles, where the Police Trail turns off, reaching across through the mountains to the Too-tizzi, a tributary of the Stranger River, en route to Fort Grahame. The Omineca below where the trail turns off is swifter, swelled in volume by a large tributary, and maintains this character until it reaches the Finlay. After being joined by the Stranger River, its largest affluent, the Omineca bends sharply south-east and about ten miles from its mouth, cuts through a rocky ridge in a canyon, the Black Canyon, which continues for a mile, and below this it opens out into a wide, shallow stream with numerous bars and islands, draining a large area of low land. Above the canyon the valley is about two miles and a half wide, broken and rough, with light sandy and clay loam soil, and timbered with a light growth of spruce, pine, and poplar.

The Police Trail from the Omineca to Too-tizzi Lake runs north-east, following a pass through a broken range of extremely rugged glacier-bearing mountains, whose summits are over 7,000 feet in altitude. The trail so called is execrable, the pass (4,000 feet) being choked with huge boulders alternating with patches of muskeg—all the detritus of the slowly receding glaciers. At the head of Too-tizzi Lake is a small area of meadow and bottom, but along the lake there is no land.

THE STRANGER RIVER.

The Stranger (or Mesilinka) River, 100 feet wide on the average and averaging 7 feet in depth, waters about 40,000 acres of agricultural land. It is joined by the Too-tizzi about four miles from where the Police Trail crosses, and forms the main branch of the Omineca, into which it empties about sixteen miles from the mouth. The Ooslinka River, which waters about 20,000 acres of agricultural land, is another large affluent of the Omineca. The land between the Ooslinka and Omineca was not explored, but it was noted that high, rounded mountains rose north of the latter. Between the Ooslinka and Stranger Rivers are mountains reaching to between 5,000 and 6,000 feet.

Excepting for a short reach of slack water at the trail-crossing, the Stranger River is very swift, averaging five miles per hour. There are numerous rapids but only one canyon, this being a mile from the mouth. The stream often splits into several channels and is full of very dangerous drift-piles.

To the south the country rises gradually in benches mostly burnt nearly clean. The land, excepting for a narrow strip of river-bottom, is, however, largely sandy to gravelly. The Police Trail leaves the river at a point twenty-four miles from Fort Grahame. Here the river turns abruptly southward and the valley narrows, its easterly limit being a high rounded range dividing it from the Finlay Valley. Here and there are patches of good bottom land and some large benches, but no compact area of good land as far as the canyon. There are no meadows and in the fall feed is both poor and hard to find.

CLIMATE.

The climate does not vary much over this area. The winter is reported severe, but the weather is generally bright and bracing. Very hot weather is seldom met with in summer. An average of temperatures taken morning, noon, and night during the months of June, July, and August was 56° Fahr., the highest recorded temperature being 92 degrees. The rainfall would be about 35 inches per annum. No farming has been done as yet beyond a little vegetable-gardening at Fort Grahame and McLeod, and this year at Finlay Junction. At Grahame good potatoes as well as other vegetables and raspberries and gooseberries have been grown over a considerable period of years. Potatoes were grown by a Chinaman on Germansen Creek during 1913, and were retailed by him at Manson Creek for 20 cents a pound. An entire absence of the dreaded summer frost until late in September is one very favourable sign. This fact was specially noticed in two seasons, and all prospectors met verified this as regards the large river-valleys of an average altitude of 2,200 feet. The fertility of the soil is vouched for by a luxuriant growth, especially noticeable in the sub-irrigated cottonwood river-bottoms.

THE FINLAY VALLEY.

The Finlay River, flowing from its headwaters in the Fishing Lakes near the Cassiar Mountains, at the north-west of the land division south-easterly for about 300 miles, meets the Parsnip, flowing north-westerly, in latitude 56° 0′ 45″, and the two rivers unite there to form the Peace, draining to the Mackenzie and the Arctic. The elevation at the junction, where the settlement of Finlay Junction is being formed, is 2,000 feet. Two general stores were started here in 1913. The Finlay River, which is about as large as the Parsnip, for the first four miles after leaving Thutage Lake is in a canyon which ends in a fall with a sheer drop of 50 or 60 feet, with swift water above and below. Below the fall the river is from 75 to 100 feet wide and 6 to 8 feet deep, with average current of ten miles an hour. The upper river flows through a generally rough country, with benches or ridges of washed boulders and gravel, evidently the remains of an immense glacial talus which once filled the valley of the Finlay, to be seen in places, reaching five or six miles from the river. There is no agricultural land in the upper part of the Finlay Valley, but much mineral, the gravel benches, according to prospectors, while scarcely rich enough to be worked by hand, providing distinct possibilities for dredging, or steam-shovel work, when the district becomes more accessible.

FINLAY RIVER.

The Finlay River is navigable for light-draught steamers at medium stages of water for ninety miles, and, if Deserters' Canyon were cleaned out, for a further distance. It averages about 250 yards in width and changes its channel, long sloughs, once main channels, being found in places. The main tributaries are the Manson, Omineca, and Ingenika Rivers from the west, and the Ospika on the east. While the amount of agricultural land on these side streams is not large, there is on the lower part of the Finlay Valley, south of Fort Grahame, a large amount of land available for agriculture. Mr. Swannell estimates the amount of farming land in the valleys of the Parsnip and Finlay, between Nation River on the south and the Ingenika on the north, at 500,000 acres.

Not much information is available regarding the general character of the upper part of the Finlay River. Travellers say that the country, while possessing a lure for the prospector, has little to offer to the agriculturist; but few reports are available. Part is rough and broken, with the river cutting between precipitous banks; in other places the banks slope gently, but there is little soil in the hills, which are composed mainly of boulders, with a small quantity of decomposed vegetable matter and moss. Farther down, below Canyon Creek, there are stretches of bottom land and meadows reclaimed by beaver. In places there are benches with small grass-surrounded lakes, but there is a destitution of soil.

FINLAY JUNCTION TO DESERTERS' CANYON.

A. W. Harvey, who made surveys in the Finlay Valley in 1912, did not go beyond Deserters' Canyon, about 100 miles above Finlay Junction. The river narrows at this canyon and for five miles is confined to one channel, when it widens again and runs swiftly, having a fall of from 4½ to 5 feet to the mile between the canyon and Fort Grahame, thirty-five miles below. The river-valley is about four miles and a half wide at Deserters' Canyon, and extends northward in the general direction of N. 30° W. for about sixty or seventy miles, the land, as far as could be seen from the top of a mountain ascended to the east of the valley, having the same general appearance, low flats at the river, reaching to benches extending back to the hills. Just above the canyon on the west, and separated from the main range by a narrow valley, a precipitous bare mountain of white limestone rises sharply to a height of 1,500 feet above the flat, and is visible a long way down the river.

At the canyon the river is only 100 feet in width, and cuts through an exceedingly hard conglomerate rock. At low water it is easily navigated by canoes, and, if cleared, could be navigated by steamers. From five miles below the canyon to Fort Grahame the river is wide and islands are numerous. Below Fort Grahame the water is not as swift, having a fall from there to the mouth, about sixty-five miles, of about 3½ feet to the mile.

A great part of the country has been burnt over. Originally the valley was heavily timbered, but now only strips remain which escaped the general fire. Near the junction with the Parsnip on the east side is a large flat of good land containing about 5,000 acres, consisting of heavy clay loam and sandy loam, timbered with spruce, pine, and poplar, partly burned. On the west side a large flat extends to the Omineca River, which enters from the west about eleven miles from the mouth.

Describing the valley generally, Mr. Harvey said: "About five miles in a straight line from its mouth the Finlay approaches close to the foot-hills of the Rocky Mountains, on the east side of the valley, and continues close to these mountains as far as the mouth of the Ospika River, which enters from the east about a mile above the mouth of the Omineca. I ascended both these rivers for a short distance on my way down. For a distance of twelve miles from the mouth the Finlay is very wide and broken up with islands and sandbars, but above the mouth of the Ospika it is confined to one channel for about twenty miles, and is nearly straight, benches varying in height from 100 to 350 feet following the course of the river, leaving a low river-flat averaging about half a mile in width. The valley is about six miles in width, generally flat from the top of the bench to the mountains on both sides, timbered with pine, spruce, and poplar, and the land is good.

"All this part of the valley has been swept by fire. About twenty miles above the mouth of the Ospika the benches become lower, the upper one being about 150 feet in height, and they also lie farther from the river, the low flat from this point for eight miles up being from one to two miles in width.

"Above this point also the river widens and is full of bars and islands, having in places an extreme width between sloughs of over a mile. These islands, and also the low flat along the river, are heavily timbered with spruce and cottonwood, the soil being a heavy black and clay loam. On the western side of the Finlay, as far as the mouth of Ruby Creek, at a distance of about fifty miles from its mouth, the land is rough, the bench rising from the river to a height of 100 to 200 feet. This bench has an average width of about two miles. Between the mouth of Ruby Creek and the mouth of the Ingenika, a distance of about thirty-five miles, there is very little land of any value on the west side of the river.

"On the eastern side of the valley the land consists of a low flat about a mile in width, heavily timbered, a bench about 150 feet high, from one to two miles wide, and a higher bench 300 to 350 feet above the river, extending to the foot of the Rocky Mountains, with a width of from two to three miles. Both these are lightly timbered with pine and poplar; the soil is generally good sandy loam, and light clay loam in places."

During the Klondike rush, when many journeyed from Edmonton across northern British Columbia, the trail used crossed the Finlay above Deserters' Canyon, and

about five miles from there is Barge Camp, which was a camping-place in the days of the Klondike rush. A barge, the remains of which were left on the river-bank, was constructed to ferry parties across the river. The trail ascended the Finlay and up the valley of the Fox River, a tributary draining from the mountains at Sifton Pass, through which the route went to the Kachika River and down it to the Liard.

MANSON RIVER.

The Manson River enters the Finlay on the west not far above Finlay Junction, flowing north-east through a break in the Wolverine Range. It often changes its channel, long sloughs, once main channels, being found in places. Not far from the junction with the Parsnip is Pete Toy's Bar, which is rich in gold, probably brought down by the Omineca River. Here Pete Toy, a pioneer prospector, is credited with having obtained a considerable amount of gold. Properly speaking, this is not a bar, but a low gravel bench on the side of the river, some 6 to 8 feet above high water. It shows evidence of having been extensively worked by shallow workings, not extending more than 5 feet deep. Panning by recent prospectors indicates that the gold found is fine and flaky.

INGENIKA RIVER.

The Ingenika River enters the Finlay from the west, about twenty miles above Fort Graham. The low flats along the river are good, but limited in extent, averaging from 40 to 60 chains in width for the last twenty miles of its course, the soil being a heavy black loam, timbered lightly with spruce and poplar. The benches, rising sharply from the bottom to a height of 150 feet, are dry and sandy and covered with small pine. The river is very swift, but free from canyons, with a fall of about 8 feet to the mile, and is navigable for canoes, except at high water, for about thirty miles.

This river has been the scene of considerable mining excitement. In the vicinity of the mouth of McConnell Creek, a stream about ten miles long, flowing in a general south-easterly direction, which enters the Ingenika River from 100 to 120 miles up from the mouth of that river, is a massive flow of granite which continues for ten miles down the river, when schists come in, and in the inequalities of this smooth granite bed-rock, in small, irregular areas, gravel, sand, and boulders have collected. Prospectors have worked these pockets with good success, the gold found being flat and flaky. This granite-bed, containing pockets of gold-bearing gravel, sand, and boulders, is also found for some distance up McConnell Creek, which for two miles up is confined to a narrow valley, gravel benches rising in terraces from the water.

OSPIKA RIVER.

The Ospika River, which enters the Finlay from the east, about twelve miles from the mouth, flows for the last ten miles of its course across the valley of the Finlay, outside of which the land along the river is poor, the benches being narrow and sandy and the river-flats very small in extent. This river is somewhat smaller than the Ingenika, and is very swift, having a fall of about 9 feet to the mile.

G. E. Townshend, Ranger of the Forest Branch, who visited this section in 1913, said the Ospika Valley contains no timber of any value. Except a small amount near the foot of the mountains, it is all burned. The country in the Finlay basin has been generally burned over on the east side between the Ospika River and Fort Grahame, the burns being restocked in the area between the river and the mountains, some five or six miles, with jack-pine, poplar, and a small amount of spruce.

Above the mouth of the Omineca the islands in the Finlay become scarcer. The banks on both sides are from 12 to 20 feet high, and in places there are clay bluffs, some reaching to a height of from 200 to 300 feet.

FORT GRAHAME.

Fort Grahame is an outpost of Fort St. James and Fort McLeod. It is located fifty-eight miles from Finlay Junction. William Fox, who was in charge for many years, has grown different kinds of vegetables in a small garden at the post. He

raised good potatoes, turnips, beets, cabbages, and rhubarb, as well as raspberries, gooseberries, and strawberries. He has not tried oats, barley, or rye. Mr. Ross, his successor, had a good crop of potatoes in 1913 which averaged ½ lb. to each tuber. The Police Trail built by the Royal North-West Mounted Police passes through Fort Grahame from Alberta and Fort St. John on its way to the Telegraph Trail and the Skeena. In 1905-6 a large detachment of the Royal North-West Mounted Police wintered here and built winter quarters. Opposite the post, on the west side of the Finlay, mica has been found.

THE PEACE RIVER.

From Finlay Junction, where the Parsnip and Finlay Rivers unite to bend eastward and form the Peace River, that great waterway flows north-east for about eight miles through what is practically part of the valley of the Finlay. Within half a mile from the junction the Finlay rapids are reached, nearly half a mile in length, swift, with curling waves in the centre of the channel, while towards the shores numerous large boulders, almost submerged, render that part dangerous to the boatman. Eight miles from the junction the river bends to the east and cuts through the main range of the Rocky Mountains, running in a narrow valley through the mountains for about forty miles, without much land of great value in this part.

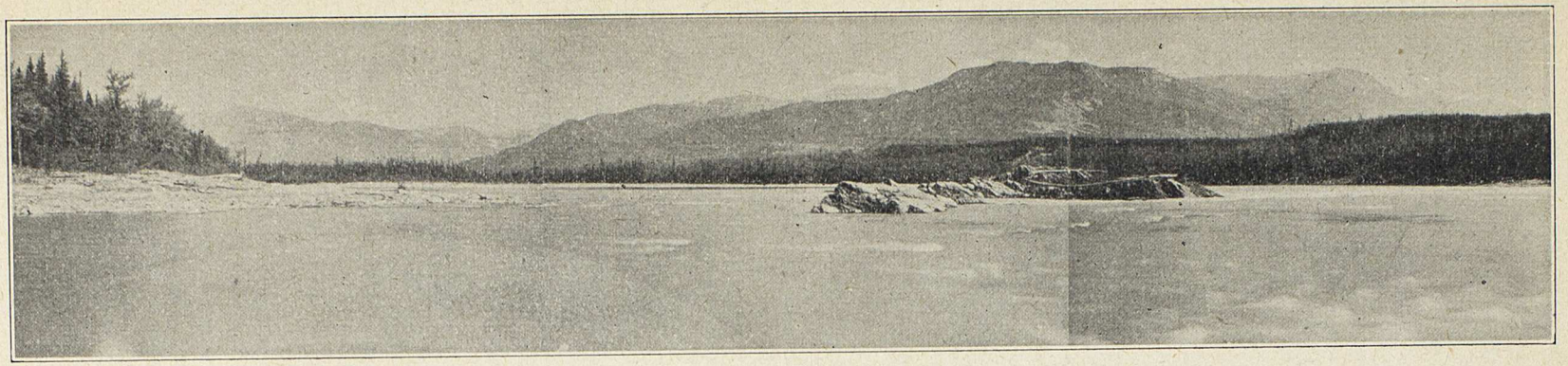
After leaving the Rockies the valley widens gradually, and small flats and benches covered with a light growth of poplar and pine occur along the river. The mountains bounding the valley decrease and the slopes are open and grass-covered. Between the point where the river enters the Rocky Mountains and the Rocky Mountain Canyon, about eighty miles from the junction, where the river, which has been generally following an easterly course, bends sharply to the south, leaving the main valley, which continues on in the same direction, A. W. Harvey, B.C.L.S., estimates that there is not more than 25,000 acres of good farming land.

The Wicked River flows in nine miles from the junction on the north, Barnard Creek five miles lower down. Other tributaries are the Ottertail, which flows in from the north, rising in the vicinity of Laurier Pass at the north of the land division, and the Carbon River, which enters from the south farther down, about thirty miles from the junction. Areas of coal have been located on this river and also near Rocky Mountain Canyon. The Wicked River, a swift and narrow stream, runs for about six miles from its mouth in a valley about a quarter of a mile wide, with green spruce timber on both sides. The valley of the Ottertail is reported to be practically stripped of timber between the mouth and the Police Trail, about fifty miles, and the narrow valley between the Ottertail and Schooner Creek is also burnt over. It is covered for the most part with a second growth of poplar and in places with jack-pine, and is good for agriculture.

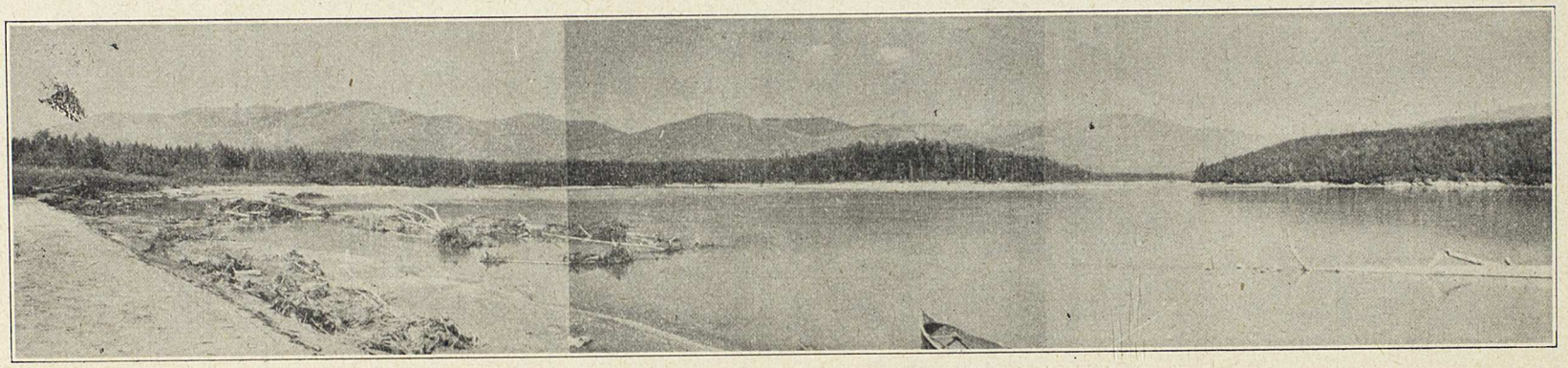
The Peace River, between the mouth of the Finlay and the Rocky Mountain Canyon, is navigable for steamboats for the entire length at every stage of water, the only obstacles being the Finlay and Ne Parle Pas Rapids. The former could be greatly improved by removing the rocks which obstruct the stream, and the latter presents but little difficulty to navigation. The Rocky Mountain Canyon, which stops navigation east and west, is reached eighty miles from Finlay Junction. Many years ago the Hudson's Bay Company had a post, Rocky Mountain House, established in 1805, at the west of the canyon, near the west end of the "Portage of the Mountain of Rocks," the portage, about fourteen miles long, reaching to Hudson Hope at the west end of the Peace River Block, where the Hudson's Bay Company's Post is now located, an outpost of Fort St. John. The main valley extends across north of the canyon, with general width of two miles for a length of twelve miles.

PARLE PAS RAPIDS.

The Parle Pas Rapids mark the eastern end of the Rocky Mountain Range, in which the peaks near the river rise from 4,000 to 4,500 feet, while to the east as far as the "Portage of the Mountain of Rocks" the hills are rounded, and only from 1,000 to 2,000 feet above the river. At this point the rocks of the coal-bearing formation begin to show up strongly, continuing to the eastward. The Parle Pas



Findlay River Rapids.



Peace River, above Findlay River.

Rapids are about 1,000 feet long and are occasioned by a nearly horizontal bed of sandstone outcropping across the bed of the river, over which, for the greater width, the water flows in a thin sheet, forming a fall of about 4 feet. Towards the north side the sandstone has been broken away, and most of the water flows to this side, forming a width of about 100 feet; short, but very rough rapids. The approach, coming down-stream, is somewhat treacherous, as the channel from above appears smooth to the south side of the river, and the rapids, true to their name—Rapide-qui-ne-parle-pas, "Rapid that does not speak"—give no warning of their proximity.

Below the Parle Pas Rapids the Peace River is very tortuous, flowing with an unbroken surface at the rate of three or four miles an hour. The width remains, on the average, about 500 feet, and the valley between the hills widens to two or three miles, the interval being composed of gravel, sand, and clay benches, with valleys of some length and width between the side-hills. These river benches and valleys are, on the north side of the river, nearly destitute of trees and covered with a species of bunch-grass. The south side presents an almost unbroken forest of small spruce.

From Finlay Junction to the Rocky Mountain Canyon there is no commercial timber of great value. The mountains on either side to the Ottertail are generally practically bare, containing only scattered patches of spruce, short and limby. The Wicked River contains about six miles of green spruce about a quarter of a mile wide, the Clearwater some heavy spruce, and the Ottertail a narrow strip of young spruce half a mile wide for ten miles. Schooner Creek has a body of young timber seven miles in length by half a mile wide, and on the Carbon River are at least fifty sections of spruce, much of which would be utilized when the development of the coal-areas there is begun. From Carbon River to Rocky Mountain Canyon the flats on either side of the Peace are covered with a light growth of pine and spruce, not a merchantable growth.

"PORTAGE OF THE MOUNTAIN OF ROCKS."

The "Portage of the Mountain of Rocks," leading around the Rocky Mountain Canyon, is reached after about five hours' travel by boat down-stream from the Parle Pas Rapids. The elevation at the west end of the portage is 1,792 feet above sea-level. The portage cuts over a shoulder of a rocky hill, with altitude of 4,000 feet, formed at the bend of the river. For thirty miles the river is here confined in canyon and is not navigable. It flows in a series of rapids and falls between perpendicular and often overhanging walls of sandstone, the vertical drop in the canyon being about 275 feet. The portage is fourteen miles long from the old Hudson's Bay Post at Rocky Mountain Portage to the post now occupied at Hudson Hope. The canyon contracts the river to a width of not over 150 feet. Coal has been found on the south side.

HUDSON HOPE.

Hudson Hope, at the lower end of the canyon, is the head of navigation up the Peace River. The settlement is located at the end of the portage trail. The Hudson's Bay Company's Post was for many years on the south bank of the river. It now occupies two rough log houses on the opposite bank. The opposition firm, Revillon Freres, also have two log houses near those of the Hudson's Bay Company. These stores are both outposts of the posts at Fort St. John, located about the centre of the Peace River Block, some sixty miles farther down the river. They were established for the purpose of trading with the Indians during the late fall and winter months, the season when the Indians of the Beaver tribe are in the vicinity. The Beavers are a nomadic tribe, having no fixed place of residence or permanent habitations, and owning neither horses nor cattle. They live entirely by hunting. Their peripatetic villages consist of tepee frames. In order to meet the increasing demands of travellers and settlers taking up pre-emption in this vicinity, the stock of merchandise has been expanded to meet the expanding demand of the country. The cost of freight or supplies from Edmonton to Hudson Hope by the steamers, which make one or two trips a year, is about 10 or 11 cents a pound.

LAND NORTH AND WEST OF HUDSON HOPE.

North and west of Hudson Hope, on the nearly level plateau about 500 feet above the Peace River, is a tract of 17,000 acres surveyed for pre-emption in 1912 by G. B. Milligan, B.C.L.S. This tract, and another containing 40,000 acres in the valley of the Halfway River, a tributary of the Peace, to the west of the Dominion Block, homesteads within the borders of which must be secured from the agents of the Dominion Government, are shown on Pre-emptors' Map No. 5, Peace River Sheet. The former tract north and west from Hudson Hope on the west of the Dominion Block extends between it and the foot-hills to the west. Forest fires have devasted this country, and the larger timber which formerly flourished has, with the exception of isolated clumps, entirely disappeared, and under present conditions of brule and light windfall, with the second growth of small poplar and willow, little labour would be required to clear the land. As it is, large areas have been almost entirely cleared by the fire, and grasses of the wild varieties, as peavine, blue-joint, etc., have taken root, and, as it cures standing, affords considerable winter feed for horses and cattle.

All this country is well watered by the North and South Forks of Lynx Creek, with their branches, these being excellent mountain-streams flowing easterly into Peace River. There are also numerous small swamp meadows carrying water for the greater part of the season.

Chinaman's Lake, about three-quarters of a mile long and half a mile wide, lies in a slight depression about a mile from the foot-hills, the surrounding country being covered mostly with small willow, poplar, and alder growth, with a few spruce. This is a very picturesque spot, and the lake teems with trout and would be a boon to settlers in the district. The top soil throughout varies somewhat, being mostly a few inches of black loam, and in places sandy loam with clay subsoil.

The country between the North and South Forks of Lynx Creek, Lots 1430 to 1437, inclusive, is chiefly high land lying on either side of the ridge forming the divide between the South Fork of the Halfway River and Kobes Creek. The top of the ridge is covered with a dense growth of small jack-pine, alder, and willow, and the soil is light and gravelly. The south slopes towards Kobes Creek are gradual and the growth is mostly scattered clumps of poplar, alder, and willow. There is also an excellent growth of peavine and grass.

LAND ON HALFWAY RIVER.

The tract, containing in the neighbourhood of 40,000 acres, also surveyed by Mr. Milligan in 1912 for pre-emption, and shown on Pre-emptors' Map No. 5, Peace River Sheet, is watered by the Halfway River and its various tributaries. The southern part has a general slope to the north towards Kobes Creek. The first bench from the creek is about 60 feet high. From this bench the ground rises gradually for about a mile to the ridge which forms the southerly boundary of the watershed of the Halfway Valley.

Kobes Creek is about 30 feet wide, and at ordinary stages of water would average about a foot in depth. It flows rapidly in a crooked and tortuous course over the stony bed of the creek. In many places the soil on this ground is covered with moss and would appear on the surface to be a muskeg, but when digging down the soil under the moss was invariably found to be a rich black loam, in places attaining a depth of 18 inches, with a clay subsoil. The growth throughout is principally second-growth poplar, willow, and alder, with patches of spruce and pine. This land is drained by small streams originally from the seepage water along the low hills to the south.

Lots 1440, 1441, and 1442 lie along Kobes Creek, there being some excellent meadow land along the lower flats, which, for the most part, are open, with light growth of poplar and willow. The upper benches on either side of the creek are covered with a heavier growth of small jack-pine, poplar, willow, and spruce. The soil is all sandy loam.

On the slopes towards the South Fork of the Halfway River the growth is dense alder and willow, with windfall. The soil is light and gravelly. Good bottom land is found on Lots 1431 and 1433. The South Fork of the Halfway River is about 5

chains wide between banks and has a very swift current, the actual volume of water being about 2 chains wide and 1 to 2 feet deep. This stream, as well as the main branch, teem with trout, being principally char, rainbow, and grayling.

The land surveyed between the Halfway River and the South Fork is a tract which lies mostly on a level bench between the two streams and contains some excellent land, the strip along the South Fork being mostly all open meadow land, with scattered clumps of small willow and poplar. This land has nearly all been burnt over, resulting in a second growth of small willow and poplar, with here and there trees that have escaped. There is an excellent growth of peavine and grass throughout. The soil is mostly black loam with clay subsoil.

Near the junction of the South Fork of Halfway River and the main stream sixty sections were surveyed.

HIGH-LEVEL PLATEAUX EAST OF HUDSON HOPE.

Hudson Hope may be taken as marking the eastern boundary of the foot-hills. To the east the country spreads out into high-level bench prairie lands, having a general height of from 2,200 to 2,400 feet above sea-level. The Peace River has cut into this to a depth of about 800 to 1,000 feet, while the smaller tributaries have cut to a correspondingly less degree. Almost everywhere the surface for a depth varying from 1 to 5 feet is composed of a fine, dark, loamy soil, resting on a bluish clay, underneath which, as seen in the cut-banks along the river, lie clay-shales, with beds of semi-coherent sandstone, all belonging to the Cretaceous period. Interbedded with these measures there are, probably, occasionally beds of lignite, and possibly of true coal. Float from these seams is found in various creeks.

THE WIDE PEACE RIVER.

Below Hudson Hope the Peace River has a width of from a quarter to half a mile, and, although flowing at the average velocity of from five to six miles an hour, contains no rapids, as its bed is composed of gravel and small, round, water-worn stones, producing innumerable bars and shoals, with numerous islands, nearly every one bearing evidence of having been originally a gravel-bar, on which, at the upper end, a log-jam had formed, producing a breakwater behind which the sand and silt had collected, forming a foothold for the vegetation of forest trees which now grow so luxuriantly. In back channels and eddies sand and silt bars have collected, and these, particularly nearer the canyon, show colours of fine gold. Attempts have been made to wash these bars with cradles and sluices, but, while some quantity of gold has been recovered, the bars are not rich enough to pay for this class of mining. The results attained indicate the possibility that they can be successfully worked by dredging when transportation facilities permit of heavy machinery being taken in. At highest water the river is too swift, and at low water too shallow, for steamboat navigation, but for a period during midsummer the Hudson's Bay Company operates a large and well-equipped river-steamer from Vermilion to Peace River Crossing, at the junction of the Smoky River, a distance of some 300 miles, with occasional trips to Fort St. John and to Hudson Hope, a distance of about 250 miles from Peace River Crossing; and another trading company has a vessel making occasional trips, thus providing transportation for over 550 miles on the river, about 50 per cent. greater distance than that provided by the St. Lawrence from the Great Lakes to Quebec. The steamers on the Peace River run only on an approximately schedule, as the bulk of the business originates with the owners—chiefly the Hudson's Bay Company. Their chief object is to make three round trips from Vermilion to Fort St. John and one to Hudson Hope with supplies, returning with the furs secured from the Indians in trade. According to the Geological Survey, the fall in the river between Hudson Hope and Vermilion is 572 feet, or about 1 foot to the mile. The ice starts to run in the river about the end of October, and it usually closes about the beginning of December, starting to break up about the beginning of May and being free by the middle of that month. Owing to the current the ice drifts for some time before finally jamming and closing the river.

SETTLEMENT INCREASING.

At present the population of the Peace River country is small, but rapidly increasing. In 1913 there were about forty settlers near Hudson Hope, and about thirty along the Peace River between there and Fort St. John, and about 400 in the Pouce Coupe Prairie, this number being likely to be quadrupled this summer. People from east and west are flocking in—land-seekers, parties looking for cattle localities, and coal operators. The bulk of the settlers are men who have brought in their families, stock and farm implements, prepared to make their homes. N. F. Murray, who made a report on the Dominion Block in 1913, says it is expected that, although there are locations for a large number of settlers, the block will be taken up inside two years, not later than three.

The Dominion land offices for filing in this section are located for the north of the Peace at Grouard, 300 miles away, and for the south at Grande Prairie, ninety miles from the nearest point, so that it is a season's work to locate, file, and get started.

PEACE RIVER BLOCK.

What is known as the "Peace River Block" is a parcel of land seventy-eight miles square and comprising 3,500,000 acres in the Province of British Columbia. It was conveyed by the Provincial Government of British Columbia to the Dominion Government for the purpose of opening it for settlement. It therefore comes under the "Dominion Homesteads Act" rather than under the British Columbia method of acquiring a homestead. The eastern boundary of the block is the boundary-line between the Provinces of Alberta and British Columbia; the southern boundary is approximately 55° 30′ of north latitude, and extends west for a distance of seventy-eight miles from the Alberta boundary; thence north for seventy-eight miles; thence east again to the boundary of Alberta for the same distance. The Peace River runs in an easterly direction through the centre of the block.

This section of the country is naturally divided by the Peace River. The northern part is a level plateau 900 feet above the river at Fort St. John, with average altitude of 2,000 feet above sea-level. The Peace River cuts the southern rim of the plateau and flows along the foot of a low range of hills extending easterly from the Rockies, separating the northern from the more low-lying and broken-up plateau of the south. These plateaux are gridironed and drained on the north by the North Pine and Halfway Rivers and Cache Red Roche and Lynx Creeks; on the south by the South Pine, Kiskapiskaw, Pouce Coupe, and Moberly Rivers. These side streams are mainly deep narrow gorges draining a country for the most part denuded of timber, and are subject to great and rapid extremes of volumes. The valleys in places widen into low-lying river-flats and benches.

The country, hills and all, seems to be universally covered with a rich black loam of varying degrees of thickness overlying a clay and, in some cases, a sand subsoil. The wild vegetation is rich and luxurious; rye-grass, red-top, wild timothy, buffalo-grass, blue-joint, and peavine grow everywhere to a great height.

NORTH OF PEACE RIVER.

Nearly the whole of the Peace River Block north of the Peace River has splendid soil for agricultural purposes, and it is about 25 per cent. prairie or lightly wooded. Most of the open prairie is along the Peace River and its tributaries. The climate is much the same as that west of Calgary, but there is much more rain and snow. Between Moberly Lake and Hudson Hope is some rolling country cut into ravines and heavily timbered. Moberly Lake has an elevation of 2,050 feet. There are hills near it richly grassed where horses can winter out. Near the South Pine River at the south-west corner of the block the land is hilly and broken, rising to a plateau with burnt timber and windfall 1,000 feet above the river. Table Mountain rises about twenty miles from the western boundary-line south of Pine River. The river, 200 to 300 feet wide, with a current of three to five miles an hour, has a valley about a mile wide, reaching to the plateau some 800 feet above on either side. The pasture and soil is generally good. Between the Pine and Kiskatinaw River is

heavily timbered country, with large poplar, spruce, balsam, and birch, generally rolling, with good soil. Near the Kiskatinaw River is prairie and bluff country, and the south-west section between the river and the southern and eastern boundaries, and extending far beyond the block, is the Pouce Coupe Prairie, a great stretch of almost level, lightly wooded land, with excellent black loam soil.

The valley proper of the Peace in the block is from one and a half to three miles wide, the river running from 700 to 1,000 feet in width. North and east of Fort St. John is a level plateau with rich loam soil, covered with luxuriant grasses and peavine, with bluffs of small poplar and spruce. Near Charlie Lake, north-west of Fort St. John, and between it and the Peace River Valley, is a flat 300 feet above the river. Near the north boundary there is rolling country, heavily rolling in places, generally well wooded with jack-pine, spruce, birch, willow, and alder. The soil is black loam and sandy loam on clay, with occasional spruce and tamarack muskegs.

WATERCOURSES OF THE BLOCK.

There are an abundance of fine watercourses in the Peace River Block. Flowing from the south and emptying in the Peace River, there is Moberly River, which drains Moberly Lake, in the neighbourhood of which, the Indians say, there are hot springs; the South Pine River and its several branches; the Mud River and the Pouce Coupe River. From the north-west the North Pine empties into the Peace. Then there is the great Peace River itself, which flows through the centre of the block. This river varies in width from a quarter of a mile to a mile. It has been rightly named "Peace"; for silent, majestic grandeur we have seen nothing that can equal it. The name has a fascination for the outsider; to those who have seen it and traversed its placid waters there is ever an insistent call to return to her. In summer and fall the Peace and the Pine Rivers are beautiful, clear-water rivers. Many of the rivers farther south—most of them, in fact—are muddy throughout the year.

There are a number of blocks of good bottom land on the Moberly and South Pine, and scattered patches of fine ranch land on the Fish Lakes and Graveyard plateaux and along the South Pine and Kiskatinaw, also fine prairie of five townships on the middle branch of the South Pine.

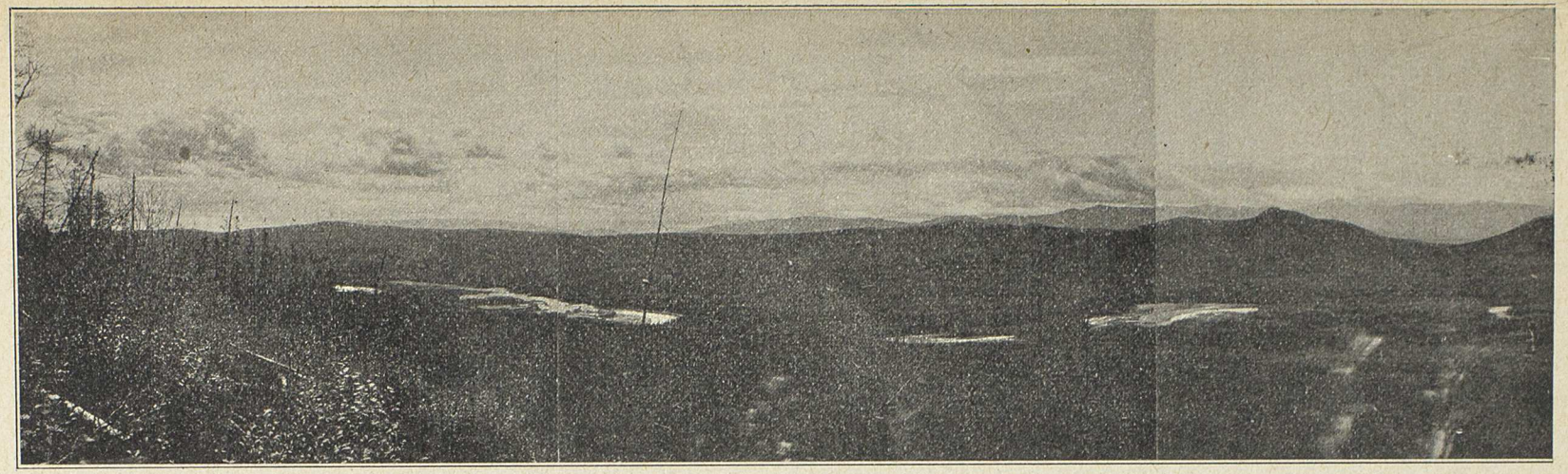
HUDSON HOPE TO MOBERLY LAKE.

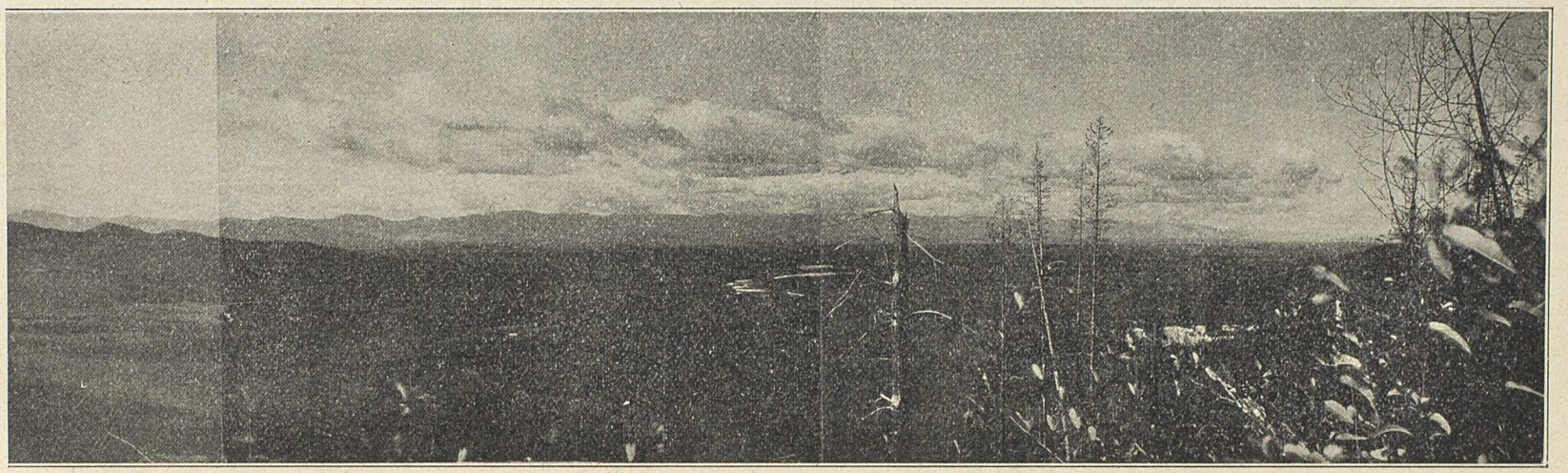
The trail from the Peace River opposite Hudson Hope to Moberly Lake, about twenty miles, follows up a small creek for some distance, the waters of which, as well as the banks, are saturated with iron rust, apparently seeping out of the banks of clay. Following up this creek for three or four miles, the level of the general plateau is reached, from 800 to 1,000 feet above the Peace River. This plateau is generally rolling, covered with luxuriant grass, although in many places overgrown with willows and poplar bushes, while along the route of the trail there is a series of small lakes or ponds. The soil is excellent, the snowfall reported to be light, but the winds strong in winter, although frequent "Chinooks" blow through the Pine River Pass. This section and the mountains to the westward are favourite hunting-places for the Indians and half-breeds of Alberta, and here they turn their horses out loose without shelter or any provision for feeding them, further than nature provides, and they say that in the spring they find them in good condition.

MOBERLY LAKE.

Moberly Lake is about fifteen miles long, in a general east-and-west direction, but about two miles wide. It receives from the west a stream which rises toward the headwaters of the Pine River in the Rocky Mountains, and empties to the north-east by Moberly River into the Peace River some five miles above Fort St. John. The lake lies at the base of the foot-hills of the main range, and on the western edge of the plateau area, which here begins to be hilly rather than rolling.

To the west of Moberly Lake, up the valley of the inflowing stream, there is a considerable area of fine farming land protected from the northern winds, but open to the warm "Chinooks" from the Pine River Pass. A number of lots adjacent to





Valley of the Parsnip River.

the boundary of the Dominion Block have been surveyed here, and are shown on Pre-emptors' Map No. 5, Peace River Sheet. Horses do well here; cattle suffer from attacks by wolves, which are numerous.

North of Moberly Lake the country consists of rolling hills, grass-covered, with occasional benches of scrub timber, affording good grazing. It is wind-swept in winter, usually free from snow, and horses are able to get at the dried grass for winter feed. Towards the north end of the lake at the outlet there is, on the north side, an area of several thousand acres of fine level grass prairie, devoid of trees and with excellent soil. This character of country extends well down the Moberly River. South of Moberly Lake the country is hilly, covered with small spruce.

VALLEY OF PINE RIVER.

Following the trail which crosses Moberly River just below the outlet from the lake, it continues east up a draw and crosses a range of hills that run north-easterly and separate the valley of the Moberly from that of the Pine. After crossing the hills the trail drops rapidly to the valley of the Pine River, in which it would appear the river has had several channels, the old ones being indicated by chains of lakes lying in clear-marked valleys all trending towards the headwaters of the present river. These old channels are some 300 feet lower than the general plateau-level, which has a height of from 2,200 to 2,400 feet above sea-level. The soil of the plateau is a fine rich loam underlain by clay. The surface is undulating, but much cut by watercourses, which become gradually deeper as they approach the larger streams.

NUMEROUS TRAILS.

The whole district bears evidence of having been covered with a dense growth of spruce or similar timber, which has, at some comparatively recent period, been burned off and has been replaced by a scrub growth of poplar from 15 to 30 feet high, through which the trail is indistinctly marked. There are numerous game-trails and Indian hunting-trails running in all directions which are confusing to a stranger, while the almost continuous growth of poplars shuts out any view of hills, etc., precluding the use of such landmarks in travelling, so that it is not advisable for any one to travel without a guide.

Reaching the South Pine River, the trail keeps along the plateau some distance back to avoid the numerous coulees or gulches making out from the main valley. It is not practicable to follow down in the main river-valley, since, while there is considerable bottom land, it is first on one side of the river and then on the other, effectively cutting off travel along either bank. As the Peace River is approached the valley deepens, but the characteristics of the plateau remain the same. Nearing the junction with the Peace, the Pine River bends to the east and enters the Peace about five miles below Fort St. John, while the trail continues across the plateau from the bend to the Fort. The plateau maintains its level to within half a mile of the Peace, when the valley of erosion is reached and the ground drops off at an angle of 30 degrees to the river-bottom, 800 feet below. From the edge of the plateau good views of the river are obtained, showing its sinuosities for miles, various islands, and back channels.

The trails from the south to Fort St. John converge on a large flat, some 10 or 15 feet above the river, and three or four miles long by half a mile wide, much being open frame and the remainder covered with poplar and aspen. The soil is excellent. Two log houses were built on this flat by the Commissioner appointed by the Dominion Government to select the Peace River Block. The altitude here is 1,450 feet.

FORT ST. JOHN.

Fort St. John lies on the north bank of the Peace River on a small area of comparatively level land, about one square mile in extent, at the foot of steep banks which rise sheer to the north and west some 800 feet to the plateau-level. For some decades a post of the Hudson's Bay Company has been located here, and some years ago free-traders established a post which, in 1904, was taken over by Revillon Freres

as one of their chain of posts. During the winter of 1905-6 the Royal North-West Mounted Police maintained a detachment that had been employed in cutting out the Police Trail at the post. Generally there are quite a number of Indians camped in their tepees here, and frequently groups ride in for supplies.

Fort St. John is in Township 83 of the Peace River Block. It is expected that a telegraph service will be extended to there from Beaverlodge, Alberta, with which point a mail service is carried on. The wagon-road from Dunvegan reaches the post, passing through sections 19, 30, 31, and 32. The Mounted Police in 1905 graded this road up to the banks of the Peace in Section 19, but it is yet too steep for practical use. Pack-trails lead to Pouce Coupe Prairie, and to Moberly Lake and Pine Pass via the South Pine River. The Police Trail from Dunvegan to Fort Grahame and the Skeena branches from the Dunvegan wagon-road in Section 30 and runs north-westerly. The trails are comparatively poor. That to Pouce Coupe is continued from there as a road without bridges or culverts to a connection with the Saskatoon Lake system of roads. The White Man's Trail, an accentuated Indian trail, runs from Pouce Coupe to Moberly, and a poor trail from there to Hudson Hope. There are also two difficult trails on either side of the Peace between Hudson Hope and Fort St. John.

ROADS AND TRAILS.

The road extending to Fort St. John from Peace River Crossing and Dunvegan was built by the Dominion Government in the days of the Klondike rush—the days of hardship and death for many who essayed the "Edmonton route" to the Yukon. The Mounted Police have done some work on it, extending it as a track over the plateau, and have marked a trail from it to Fort Grahame and beyond. This trail bears north-west from Fort St. John and strikes the Halfway River about halfway up. This river and a tributary are followed for some distance, and the trail then strikes across the plateau to the headwaters of the Ottertail, which are followed up through the Laurier Pass, through the Rocky Mountains to the valley of the Finlay and to Fort Grahame. For the most part, the route has been along an old Indian trail between these two points, which has been recut and cleared out. This trail continues from Fort Grahame to Fort Connelly, on Bear Lake, and thence to Hazelton.

PLATEAU NORTH OF THE RIVER.

To open up the northern plateau a road is required from the eastern boundary on the line of the trail from Dunvegan to Fort St. John and the upper waters of the Halfway River. This would cross level plateau, open prairie for the most part, some parts lightly brushed. From this road a fair grade is possible to the Peace opposite the Peace end of the Pouce Coupe Central Road, construction of which was begun in 1913. At the North Pine River there is a gorge 900 feet deep to cross. On the river-bottom the old Indian trail branches, one branch running up the valley to a point opposite Fish Creek, the outlet of Charlie Lake, which is twenty-one miles up the North Pine from the Peace River. The crossing here is about 400 feet, with gravel bottom. To the plateau the route follows a mile and a half up Fish Creek and turns southerly up a long draw. It runs on the plateau past the south end of Charlie Lake to Cache Creek, crossing this deep valley, and striking south-westerly to leave the plateau and cross the Halfway River, a gorge similar to the North Pine. Cache Creek Valley rises rapidly from the Peace to the plateau-level. The Halfway River is about 250 feet wide at low water and swells to 350 feet at high water. From here to Hudson Hope it crosses low benches and flats over fairly level country, crossing Red River, two large creeks, and one cut-bank. From Hudson Hope to Fort St. John, sixty miles, the mail route, is a much travelled section. The Halfway Crossing is difficult and dangerous; several drowning accidents have occurred there.

MAIL ROAD FROM EDSON.

The mail road from Edson via Grande Prairie, Saskatoon Lake, and Beaverlodge enters British Columbia at Borden's, at the south end of Swan Lake, in Township 26, in the neighbourhood of which two tracts have been surveyed reaching to

the southern boundary of the Dominion Block, and are shown on Pre-emptors' Map No. 5, Peace River Sheet. The British Columbia Government began construction of a road from this point in 1913 through the Pouce Coupe Prairie to the Peace River near the mouth of the Kiskatinaw River. This road runs north-westerly for a few miles, then due north over a gently rolling country to a point near the mouth of Bazette Creek, where it enters the Pouce Coupe Prairie proper. The route for this road was chosen by the settlers from Bazette Creek north, acting through a committee. The length of this road will be about fifty miles.

SOUTH OF THE PEACE.

The country south of the Peace is not provided with a road yet, only trails. The White Man's Trail crosses to the South Pine River, and has branches to Moberly Lake and Hudson Hope and to Fort St. John. A trail from it reaches to the South Pine at the southern boundary of the Dominion Block, and continues by that valley to Pine Pass and Fort McLeod. Farels Creek, along which this trail runs to the South Pine, crossing the Park Creek Prairie on the way from the Kiskatinaw, is a small, narrow stream, cut down deep at the lower end. The plateau falls gradually down to it. The South Pine River at the crossing is 400 feet wide, with water too deep to ford. Late in the season there is a ford four miles and a half below. There is a fairly good trail up Moberly River, which is reached by the White Man's Trail at the lower end of Moberly Lake.

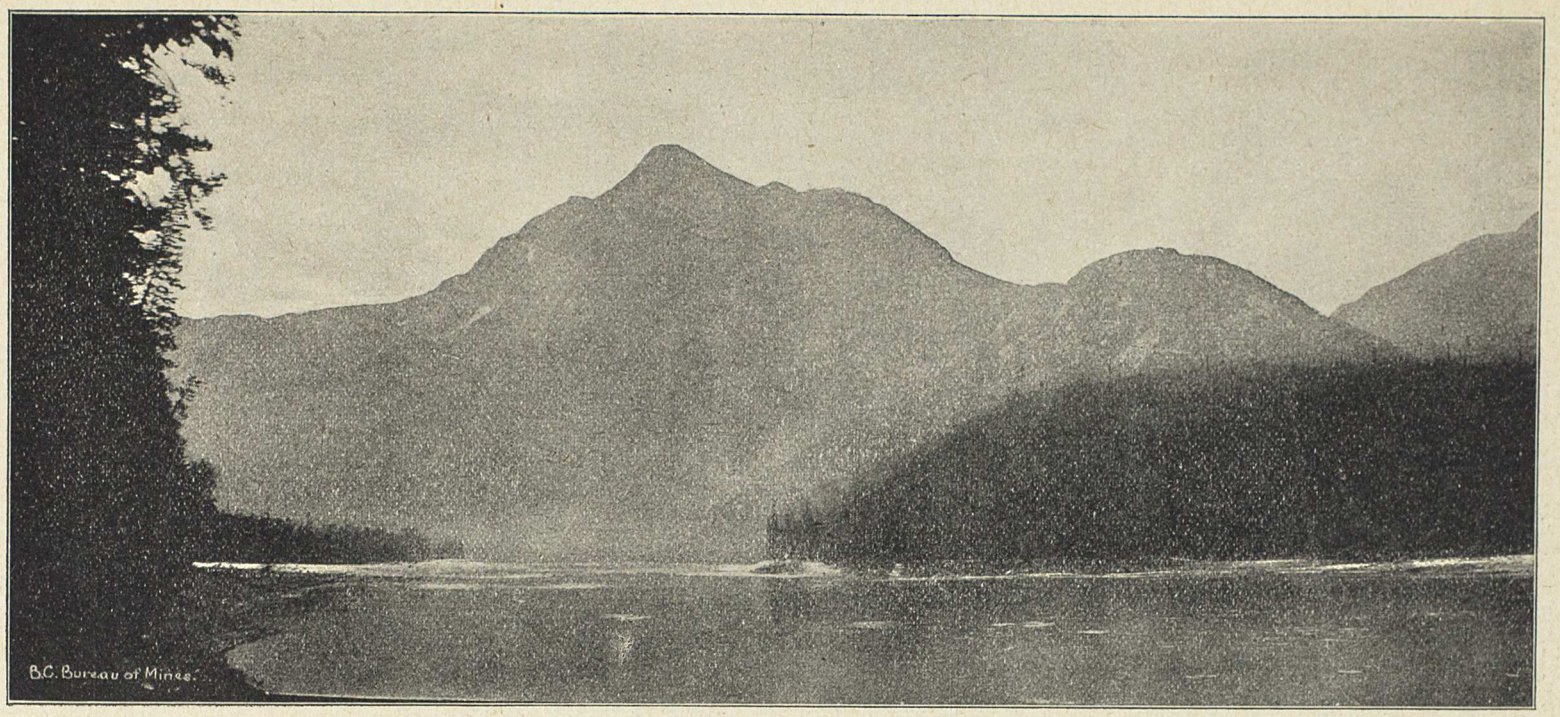
The trail from Pine Pass and Fort McLeod runs north-east to some lots surveyed for pre-emption at the head of Moberly River, shown on Pre-emptors' Map No. 5, Peace River Sheet, rising very steeply to the plateau 1,200 feet above the South Pine. The group of lots are on good land. There is good land for four miles above Moberly Lake, and then the good land is found in patches. It is three miles from the western boundary of the block to the head of Moberly Lake. The trail follows its upper shore and continues along Moberly River to Fort St. John. Moberly River is about 100 feet wide, swift, 2 feet deep in the rapids, and can be forded at most places. The water is of a light-brown colour. The banks are low, resembling those of eastern rivers. The trail is about forty miles long, with good grades, crossing one low hill. The trail from the South Pine Forks to Fort St. John is over the best bed in the country, an ancient river-channel with dry gravel benches, almost the only gravel to be seen in the country. At the Fort St. John end, however, it is too close to the South Pine, crossing six large creeks.

POUCE COUPE PRAIRIE.

The south-eastern corner of the Dominion Block and the adjoining land to the south-east of it contains a great amount of good agricultural land. It is for the most part an open prairie, known as the Pouce Coupe.

The district takes its name from an Indian chief, Pouce Coupé, "cut-thumb," whose hunting-ground it was. It has long been a favourite hunting-place for the Indians from the plains, and here they wintered their horses while they spent the winter hunting and trapping in the mountains to the west. The snowfall is said to be light, and the wind keeps the side-hills bare, giving winter grazing. The trees and bushes present a scrubby appearance, indicating a severe winter, but plant-life, grasses, etc., which have a summer's growth, bear strong evidence of the fertility of the soil and the warmth of summer.

The Pouce Coupe Prairie is an extension into British Columbia of the prairie lands of Alberta, and is a great, open, rolling prairie, some twenty-five miles wide by thirty-five miles long. The prairie land lies immediately west of the British Columbia boundary, the northern edge reaching to within ten miles of the Peace River. It is bounded on the west by the Mud River and on the east by the Pouce Coupe River—the d'Echafaud of Dr. G. M. Dawson's report. The general elevation is about 2,400 feet. The prairie is almost free from brush and is covered with a great growth of wild hay.



Mt. Selwyn on Peace River, B.C., looking South-east.

The soil of the Pouce Coupe is excellent, a dark loam varying in depth from 3 to 15 feet, with a bluish-clay subsoil, underlain by similar clay which is harder in nature. Hector Tremblay, a pioneer of this section, says the prairie land is excellent for growing wheat. He has raised crops of wheat and oats successfully for several seasons, once having his wheat partially destroyed by an early frost.

Analysis of a sample of the soil taken near Saskatoon Creek by the Provincial Assayer some years ago was as follows:—

Moisture	2.80 per cent.
Loss by ignition	8.20 „
Insoluble	77.61 „
Oxide of iron	3.50 „
Alumina	5.70 „
Lime	0.60 „
Potash	0.81 „
Phosphoric acid	0.20 „
Nitrogen	0.44 „
Alkali	None.

Where the sample was taken, near Saskatoon Creek, the bank, having been undermined by the creek 30 feet below, had broken away, leaving a fresh face, and the sample represented an average of the soil for a depth of 30 inches over a considerable length.

The Pouce Coupe is well watered by the Pouce Coupe River and its many branches. There are many smaller creeks as well. Water can be secured in almost any place on the prairie by digging to a depth of 20 to 30 feet. It is fine spring water; alkali is not present.

Surrounding the prairie is a growth of spruce and poplar timber in thickness from 6 to 24 inches. In the valleys of the rivers and creeks there are occasional patches of poplar and spruce of sufficient size for building purposes.

IDEAL PLACE FOR STOCK.

The Pouce Coupe country is considered an ideal place for stock. Most of the native grasses cure on the ground, making very nutritious winter feed. The Chinooks—the prairie is so located that they come down three mountain passes and sweep across like a warm ocean current in an arctic sea, warming everything they touch, melting the snow and keeping it down so that animals find little difficulty in securing food—enable the ranging of stock. There are herds of wild horses ranging on either side of the river between Peace River Landing and Fort St. John. They are not native to the country, as they are made up partly of horses which escaped from the prospectors' parties travelling through during the Klondike rush, and quite a large percentage are descendants from a herd taken in by the Hudson's Bay Company. The Indians have wintered their horses out for years without a spear of hay. Whites and Indians agree that horses wintered out come through in good condition. Not only is the prairie a favourite feeding-ground for horses, but also for wild animals. Rabbits are very plentiful. Lynx follow the rabbits, also foxes; bear find plenty of food to suit their taste without bothering with rabbits. In the spring they vary their diet from ants to trout and tender young peavine, but with summer comes the berries, saskatoons, strawberries, cherries of several varieties, and, most favoured, the willow berries. The saskatoon, most prolific and palatable of the native berries, has never, within the memory of the oldest Indian, missed a bountiful crop. The blue-joint, peavine, and vetches in August would hide a horse.

The trail to the Pouce Coupe Prairie from Fort St. John mounts to an intermediate bank about 300 feet above the river in two miles, and continues on it for three miles to a cut-bank on the Pine River about five miles from the mouth. The intermediate bench, a fine prairie devoid of trees, affords excellent grazing, but the soil, lying on gravel, is not good for cultivation, differing in this respect from both the upper and lower benches. The Pine River can be forded in summer, the water reaching to a horse's stomach. Beyond the river the trail mounts to the plateau-

level along a hog-back ridge and continues over the plateau to the Pouce Coupe Prairie, with numerous drops into the valleys of interesting stream-beds, for the most part dry in summer.

The upper plateau is rolling prairie with small rounded hills, covered chiefly with stunted poplar. The soil is excellent, fine rich loam on clay subsoil supporting a luxuriant growth of wild grass and peavine. There are a few muskegs, small in area. Occasional patches of spruce forest, with fair-sized trees, which seem to have escaped the general burning-over to which this section has been subjected, are found in places.

The Kiskatinaw River is reached about forty-five miles from Fort St. John—a small stream in summer, but a deep, swift river from 100 to 200 feet wide in spring, with banks rising in terraces to a height of 500 feet above the river. This river, which has cut to that depth in the plateau, runs into the Peace about thirty-five miles below Fort St. John. From there the route reaches across a burned-over plateau, swept by winds from Pine River Pass, to the western edge of the Pouce Coupe Prairie, about fifteen to twenty miles south of Peace River, and about sixty miles distant by trail from Fort St. John. Dawson Creek flows across the south-eastern edge of this prairie to the Pouce Coupe River.

"WONDERFUL COUNTRY WITH PHENOMENAL CLIMATE."

N. F. Murray, in a report made on this section in 1913, said: "It is a wonderful country with a phenomenal climate; a surprise to any one who has never lived so far north, and seemingly incomprehensible to Canadians. The fall is open; outside work such as surveying was carried on to New Year's. Snow seldom falls until then. About January 1st the real winter sets in; it is practically six weeks of very severe cold, and from then on one is liable to get the warm Chinook winds at any time. The maximum snowfall is 2 feet. This is liable at any time to disappear, or nearly so. Certain slopes and hillsides are never covered with snow. The snow disappears in March and April. Up to the present horses have wintered out, and no hay to speak of has been put up. When turned out in good condition in the fall, horses can be picked up and worked at any time. At Grande Prairie on December 12th, 1912, the settlers were fighting prairie fires. At Cache Creek, near Fort St. John, this year, Stewart burned the old grass on his holding on March 12th. Almost as soon as the snow goes off seeding can begin. The long days of sunlight and entire absence of spring and summer frosts permit all seeding to be done by the first week in May. Grain ripens from August 5th on. Barley sown in the middle of May is usually ripe by the last of July. In the Pouce Coupe section I saw on July 24th barley and oats 4 feet high. The same at Hudson Hope and along the Peace.

"Hector H. Tremblay, the oldest settler, who has 100 acres under cultivation this year, raised last year potatoes up to 3½ lb. in weight; cabbages up to 16 lb. His grain last year ran: Oats, 75 bushels to the acre; often as high as 100 bushels; wheat averaged 45 bushels and barley 60 bushels to the acre.

"The gardens compare favourably with those of southern British Columbia and contain all the hardy vegetables. I saw all over the Peace River Block from Hudson Hope to Borden's, at Swan Lake, fine potatoes, turnips, beets, carrots, onions, peas, beans, lettuce, rhubarb, corn, and apple-trees raised from seed planted eighteen months ago and which are now 4 feet high.

"Though most of the land under cultivation, about 1,000 acres, was wild land eighteen months ago, the experimental stage was passed long ago, and luxuriant and prolific growth is the rule everywhere. On September 7th this year was the first frost of the season. No grain was touched. Potatoes were cut down on the higher levels of the Pouce Coupe and Hudson Hope; only slightly touched on the lower levels. There was no sign of frost at Moberly Lake on September 15th in the gardens."

PREMIER ON RAILROAD COMMUNICATION.

Speaking on the subject of the extension of the Pacific Great Eastern Railway into the Peace River country in February, 1914, the Hon. the Premier, Sir Richard McBride, K.C.M.G., said: "We have on record in our archives and in our various

departments many different accounts of the Peace River country, some of them extending back over fifty years. Many of them are most interesting, but they all deal with the same theme—namely, the wealth of that country. I have yet to hear one single word that has been said in favour of the development of this zone without having that word associated with the building of a railway. It is this that the Government now proposes to provide. We have watched with increasing interest the settlement of the Peace River country, and we are advised on authority that in one part of it several hundred people settled there this year. We hear from reliable sources at Edmonton that people are going into that part of the country not in hundreds, but in thousands. It is common knowledge that there is a very considerable settlement there to-day. It is equally well known that, with a view to having their share in the benefits to be derived, the Government of Alberta has very heavily assisted a road from Edmonton, whose terminal will be located in the Peace River country, and whose operations must be designed to perform a very wholesome work in the expansion of that portion of Alberta and northern British Columbia. Unquestionably, the Edmonton merchant is alive to the business of the Peace River country, and he has every right to be. He would not be entitled to a part in the business unless he were a man fully alive to the possibilities of the right kind that might offer.

"This is the reason why we should be spurred on to action. We should conceive it to be in the general public interest that the Province of British Columbia should not be behind in the march of progress, and should attack without delay the proposal to build a standard-gauge road into the Peace River country, and give to the people of Vancouver and Victoria and the other southern sections of the country every advantage that the pioneer section of British Columbia has a right to expect from the growth of the new and great North.

"The stories that come to us with regard to the Peace River country make most interesting reading, but I would be trespassing upon the time of the House if I attempted to relate any of them. I wish to say, however, that they have a tremendous bearing upon the issue. The coalfields of the Peace River country to be traversed by this road are of undoubted value and considerable extent, and upon proper development they promise to give to the world the greatest producing coalmines extant. The quality of the product is not surpassed anywhere, and our information is to the effect that there is an abundance of it.

We are advised, too, that the iron-deposits of British Columbia are of an excellent commercial quality. Reports have come in recently which go to show that almost along the tracks of the line there are almost illimitable iron-deposits, from which the mineral may be brought presently to a point where, with fuel conditions warranting, we shall be able to turn out an iron product second to none on the Continent of America.

"But, in addition to coal and ore deposits, we have extensive grazing lands, wonderful timber belts, and vast waterways. All of these things seem to me to offer an irresistible case that would more than justify the project."

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